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ABSTRACT

Intended as a companion piece to volume 3 in the Method Series, Health Manpower Planning (CE 024 231), this third of six volumes in the International Health Planning Reference Series is a combined literature review and annotated bibliography dealing with health manpower planning for developing countries. The review identifies literature relevant to three areas of interest. Assessment of supply behavior includes topics of supply analysis: physicians, nurses, midwives, health teams, technicians, dentists, health center staff, medical education, health training, and productivity analysis. Assessment of demand behavior includes such topics of demand analysis as projection and economic constraints as factors. Assessment of balance behavior covers topics of administration, organization, distribution, access, utilization, and planning/evaluation. The 223 references included in the review are contained in the bibliography. (References are also listed by categories discussed in the review. Within the review the reader is directed to the corresponding list.) The format for each entry is author, title, source or publisher, date of publication, and annotation. (YLB)

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International Health Planning Reference Series

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Health Manpower Planning Referendes

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Selected Bibliographies and State-of-the-Art Review for Health Manpower Planning

CE 024 225

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Selected Bibliographies and State-of-the-Art Review for Health Manpower Planning

U.S. Department of Health, Education, and Welfare
Public Health Service
Office of the Assistant Secretary for Health
Office of International Health

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PREFACE TO THE SERIES

The International Health Planning Reference Series has been developed by the Office of International Health, Public Health Service, on request of the Agency for International Development.

The series consists of six basic volumes which cover a variety of health issues considered vital for effective development planning. These volumes contain reports of the state of the art surveys and bibliographies in selected subject areas. These are intended for the serious researcher and planning professionals.

These six volumes are supplemented by ten additional works in the International Health Planning Methods Series, which is intended to assist health sector advisors, administrators and planners in health related activities. Each manual in this series attempts to be both a practical tool and a source book in a specialized area of concern.

The volumes in the International Health Planning Reference Series contain the efforts of experienced professionals who have identified limited but pertinent reference materials for planning in a particular field. These efforts, however, were short term (2 man months) and were mainly prepatory to the writing of the manuals. Through this effort they hope to provide the AID field officers and the host country counterparts with useful references for systematic health planning in developing countries.

PREFACE TO VOLUME THREE

This literature review and annotated bibliography deals with the subject of health manpower planning for developing countries. It is the third volume in the series of works known collectively as the International Health Planning Reference Series.

The series was produced by the Office of International Health as requested by the Agency for International Development to provide AID advisors and health officials in developing countries with critically needed references for incorporating health planning into plans for economic development.

This volume is intended primarily as a companion piece to volume three in the Methods Series, entitled Health Manpower Planning. References included here are provided to identify works that support and enlarge upon material contained in the basic manual.

It should be stressed from the outset that the bibliography compiled here makes no claim to be an exhaustive or comprehensive listing of all available resources. It is a selective bibliography only. Materials were included only if they dealt primarily with the limited area of interest defined as health manpower planning in developing countries, or contained material directly pertinent to that focus of interest.

Texts written in languages other than English were excluded from consideration here. References that were of solely historical interest were not included; nor were several otherwise excellent texts that related only in general terms to the focus of the manual.

Preparation of this volume was undertaken for the Office of International Health by R.H. White & Co., Management Consultants of San Francisco, California. This volume was prepared under the supervision of Robert J. Staff, M.B.A.

The bibliography presented here contains nearly 400 sources in the area of health manpower planning. These sources are presented alphabetically and have been culled from an initial selection of more than 700 references.

For the convenience of the reader/researcher, the final selection of references has been divided into three areas of interest.

Assessment of supply behavior includes topics of supply analysis. Sources under this title include coverage of physicians, nurses, midwives, health teams, technicians, dentists, health center staff, medical education, health training, and productivity analysis.

Assessment of demand behavior insludes topics of demand analysis including projection and economic constraints as factors in health manpower supply.

Assessment of balance behavior is the author's term for topics of administration, organization, distribution, access, utilization, and planning/evaluation.

Within these three groupings of reference material, the authors of this literature review and bibliography have frequently expressed personal points of view. While their viewpoints generally coincide with organizations or agencies with whom they are associated, the material in this text should not be construed to reflect the official policy of any agency or organization.

It is hoped that the references contained in this work will assist researchers and planners to identify and select appropriate health manpower planning strategies for use in developing countries.

PIA Ahmed

Paul I. Ahmed
Project Officer
Office of International Health

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CHAPTER I: INTRODUCTION

A. Approach

This document provides a brief review of the literature extant in the field of health manpower planning assessment in the developing countries. It does not attempt to cover the entire field of health manpower, or of assessment methodologies, or even to detail each particular source. Rather, this work strives to bring together under one rubric approximately three hundred sources and to categorize these works for future reference. It should be stressed that this effort is not necessarily comprehensive; its production has been limited by time and funding.

The approach used here may be simply stated: sources dealing with the assessment of supply and demand behavior have been identified and a separate category (assessment of balance behavior) is added. This category, then, provides a reference list of articles and books dealing with assessment issues other than supply and demand. It is felt that health manpower planning consists of determining present and future supply, present and future demand, and comparisons of the two toward the end of achieving a balance within the country. The question of "who determines what" and "what constitutes balance" are not considered in this publication since the way in which these issues are resolved depends largely on policy, not methodological issues.

In the above approach certain anomalies will become immediately apparent. Medical education and other health training, for instance, have been addressed under the supply projection subset. Obviously, the schools and training programs of any country are a prime, if not major, source of supply; present supply, however, not projected supply. While this is self-evident and would suggest that these topics be included in the supply analysis (e.g., present levels) section, education and training are viewed as issued involved in the method used for projecting future supply. Whenever medical education or other health training is discussed, both present and future levels of health manpower are considered.

A brief discussion of each of the topical issues is provided, together with a list in alphabetical order of the authors and dates of publication. Other than the initial introductory section, which purports to make some value judgments concerning what constitutes a major work in the field, further classification of the sources has not been made. Anyone seeking information in each particular area will find something of use in the field of health manpower planning assessment in the developing countries under that citation.

B. Scope

The field of manpower is voluminous, the area of health manpower only slightly less so. Within health manpower, assessment of planning issues in the developing countries trims an otherwise unwieldy body of knowledge to a reasonably manageable size. Where sources contributed to the basic topic, no matter how tangentially, they have been included. Where sources were largely repetitious (e.g., in the area of the need for medical auxiliaries), attempts were made to eliminate sources which did not offer new or different material.

In the supply analysis sub-sections dealing with manpower categories (physicians, nurses, etc.), it has been necessary to artificially combine some groups. These aggregations will, no doubt, be changed in the final assessment manual; it can be assumed that assessment methodologies which specifically tabulate, for example, the numbers of technicians and the numbers of dentists will be made at that time. For convenience and relatively even distribution of sources among compatibly sized subsets, as an illustration it is pointed out that technician and dentist sources have been aggregated. Similar artificial aggregations prevail throughout the publication.

C. Major Works in the Field

Once again, the "field" suggested here is limited to the following: assessment of health manpower planning efforts in developing countries. For the purpose of this report, "major works" have been construed to be those that offer one of the following:

- a comprehansive analysis of some particular developing country's health manpower component (and by extension have addressed all the issues covered elsewhere in this report under one cover);
- an outstanding analysis or presentation of some particular aspect of the field that has become a standard for professionals in the area (e.g., Lee & Jones' 1933 study providing the standard biologic demand parameters);
- some combination of both of these.

The field of health manpower planning in the developing countries has received increasing attention within the last decade due to the rise of basic inequities in health delivery systems. Physician/population ratios frequently cited at international health planning conferences have made professionals more acutely aware of the need for concentrated studies and providing data in this area. In the developing countries the so-called "brain drain" has sparked renewed interest in evolving methods of correction or reversal of this phenomenon. Indeed, Oscar Gish at Michigan has cited the "vicious circle" that has developed in health manpower in the less developed countries.

"...First doctors are trained in keeping with 'standards' drawn from countries with an entirely different resource base, and thus different capability for utilizing specific kinds of manpower; secondly, attempts are made to pay these maleducated doctors in keeping with their high training costs and unrealistic expectations; and lastly, private practice is encouraged as a measure of raising additional revenue and by so doing the entire public health sector is undermined, and with it the only real possibility of creating a proper health care system in a developing country." (Gish, 1971)

Obviously, this relatively uncontrolled situation in the developing countries needs immediate and expert attention in order to prevent whole populations from losing access to health services. Fortunately, several researchers have produced case studies and tools in the field. Perhaps the single most profound impact in this area has been the work of a group of former Johns Hopkins manpower experts (organized in the Sixties from Hopkins' Division of International Health) which conducts various field surveys of manpower planning efforts overseas. The Agency for International Development funded this group, which produced several classics in the field with case studies in Peru, Colombia, Bolivia, and Taiwan. Ethiopia, Kenya, Uganda, and Nigeria were also visited. These researchers were Drs. Baker, Ferguson, Hall, Haynes, and Taylor. (Mark Perlman of Pittsburgh worked with Dr. Baker in Taiwan.)

Elsewhere, other developments led to the preparation of major works in the field. Dr. Oscar Gish (Michigan), Dr. N.R. Fendall, and the team of Kriesberg, Wu, Hollander, and Bow, all produced important comprehensive work in the area. Dr. Krystynak, White House staff member, also participated in the growing development of this body of knowledge.

Essentially, these professionals directed their efforts toward specifying the basic objectives of health manpower planning, namely:

(1) "to obtain maximum productivity and effectiveness for the manpower resources available;
(2) to understand, and where possible, to control or adjust the spontaneous movement of supply/demand relationships;
(3) to provide an educational system adequate to meet future needs for health professionals;
(4) to establish mechanisms for continuing manpower surveillance and implementation of plans." (Baker,Ferguson,Hall,Haynes,and Taylor, 1968)

As a result of these early pioneering efforts and the independent work of the government of the United States of America in the area of health manpower planning for the entire country, other major works were produced by the U.S. Department of Health, Education, and Welfare. These included health manpower models and assessment of modeling efforts, as well as all types of planning process documents in the health manpower area.

In summary, the following are those articles or texts selected from the literature as the major works. Full bibliographic notations with annotations may be found (as will the remainder of sources cited in this report)in the final portion of this work, An Annotated Bibliography for Health Manpower Planning. Researchers new to this field could start with a detailed analysis of each of the items included in Chapter V , List A.

References listed in the Chapter V listings are not repeated, since in most cases the major works cover each and every area detailed in the remainder of this report. For in-tance, Dr. Thomas Hall's 1969 study of Peru covers each of the supply analysis and projection issues, each of the demand and projection issues, the economic constraints, and the "balance" behaviors (as classified here) of administration, organization, distribution/access, utilization, migration, and planning/evaluation. It would, therefore, be repetitious to mention Hall's work under each of these subcategories. Readers are cautioned against neglecting these major works which, therefore, do not appear in each of the subcategory lists. To miss using these references would be to overlook the best and most comprehensive work in the field.

CHAPTER II: ASSESSMENT OF SUPPLY BEHAVIOR

A. Supply Analysis

The analysis of supply in health manpower planning can largely be summarized as a process including (but not limited to) the following steps:
(1) definition of personnel categories to be studied, e.g., who is it that is to be studied;
(2) identification of desired variables, e.g., what is it that is to be known about the people being studied;
(3) selection of data sources, e.g., where is the information concerning these persons to be found;
(4) collection of data;
(5) analysis of the data collected.

Certain nuances are unique to the health manpower field, but for the purposes of this document, the foregoing steps are much like the planning processes used in any field. Baker et. al., (1968), in indicating answers to step one above, suggest the breakout of both professional and assistant categories of personnel according to levels of education. Figure 1 illustrates the wide variety of health auxiliaries and professionals possible of coverage under question one above.

Question two in the basic analysis scheme solicits identification of assessment variables. Over and above a simple (often not-so-simply done in developing countries) numerocal count of each of the personnel stipulated, it seems generally agreed in the literature that a credible job of supply analysis considers location of the personnel (for distribution issues), age (to facilitate future supplies based upon mortality tables and other devices), sex (men and women have statistically differing work patterns), income (though hard to obtain, such data are necessary for determining the costs of various manpower strategies), professional speciality (useful in determining distribution, overages, and shortages), background (to verify educational institution data), practice type (government, private, mixed), and some indices of productivity (number of patients per hour, per week, etc.). Though additional information and various collection methodologies exist, these are the ones that the literature indicates are basic.

Selection of data sources (question three above) leads to the following (from Baker, et.al.,(1968), and included elsewhere in the literature): records and survey of training institutions, licensing institutions, professional registeries and societies, personnel and payroll lists, the general national census, specialized health personnel census, pharmaceutical firms (if they cooperate), telephone directories, and newspaper advertisements. Various combinations of these techniques are described in detail in the literature, especially in those major works cited above that provide detailed in-country studies.

Collection of data and analysis follow the standard social science methodological patterns found elsewhere. These need not be detailed here.

1. Physicians & Doctors

These categories of personnel come in all shapes and sizes in developing countries. The literature is replete with documents debating the relative merits of one standard of professionalism as against another. What constitutes

CLASSIFICATION OF HEALTH AUXILIARIES AND THEIR RELATION TO PROFESSIONALS; FIGURE 1

FUNCTION	LEVEL OF EDUCATION		
	PROFESSIONAL (degree course)	MIDDLE LEVEL (high school plus two or more years training)	LOW LEVEL (elementary or middle school with up to one year training)
Medical Care a. Independent responsibility for treatment	Physician	Feldsher (Russia Licentiate (India;Pakistan) Behdar (Iran) Medical Asst.(Pacific; Africa)	Dresser First Aid Man Medical Corpsman (armed services)
b. Comprehensive care	Occasional Physician	Health Officer (Ethiopia)	Village Health Worker
c. Diagnostic and therapeutic specialties	Specialist	Technicians - Laboratory, X-ray, physiotherapy, etc.	Technical Assistants
Hospital Nursing	Degree Nurse	Registered Nurse, diploma (RN) Licensed Practical Nurse (LPN)	Auxiliary Nurse Ward Helper
General Public Health	Public Health Physician Public Health Nurse	Health Visitor Community Nurse	Community Nurse
MCH and Obstetrics	Physician Midwife	Midwife Auxiliary Nurse Midwife	Auxiliary Nurse Midwife Village Midwife Trained Dai
Sanitation	Sanitary Engineer	Sanitarian	Sanitary Inspector
Specialized Functions for Mass Diseases	Public Health Specialist	Malaria Officers (upper echelon)	Malaria Sprayers Vaccinations Leprosy Officers Sleeping Sickness Officers Tuberculosis Officers

Source: Baker, Ferguson, Hall, Haynes, & Taylor (1968)

a doctor is by no means clear. The sources cited in this area (particularly Gish (1971), Takalia, Taylor, et.al. (1967) and Taylor, et.al.(1976)) provide a useful path out of the forest of misunderstandings. Motivation for rural work, compensation after high expenditure for training, standards in varying countries, interfacing with auxiliary personnel, the question of facilities available, and many other issues are germane to the particular subtopic of physicians.

Perhaps the most succinct and useful summary of recommendations proposed in order to improve physician quantity and quality in developing countries, are copied from Oscar Gish:

(a) All graduates, without exception, must spend some stipulated time in rural work.
(b) An appropriate rotation system should be established which allows physicians to move to more desirable locations and educational opportunities after a particularly difficult assignment.
(c) Suitable health centers with adequate facilities and supplies of drugs must be available to the rural practitioner.
(d) Sufficient auxiliary and paramedical staff must be part of the rural health center team.
(e) Every effort must be made to assist the rural doctor with transport and, if at all possible, with a telephone or other means for communication.
(f) Every effort to link rural health centers to supporting hospital services must be made and rotation systems involving all the personnel should be created.
(g) Rural health services must be decentralized and run by those with experience pertaining to rural conditions.
(h) A flexible salary scale should provide for rural differentials with those in particularly difficult areas receiving the highest rewards.
(i) An appropriate rent-free house should go with a rural post.
(j) The education of the rural practitioner's children must be arranged.
(k) Consumer goods, such as cars, should be made available to the rural physician on a tax-free basis.
(l) Regular trips to the "outside" for refresher courses should be made available.
(m) Those who have worked the longest in the rural areas should be given preference for obtaining higher qualifications and, if appropriate, for overseas training.
(n) The higher ranks of the health service should largely be filled by those who have worked for substantial periods in the rural areas." (Gish,1971)

While this useful listing may seem excessive given the political realities of developing countries, Gish for one feels that "any developing country which could accomplish some substantial part of the items listed above would undoubtedly be one which would find it possible to solve not only its health care problems but most of its other development problems as well." (Gish, 1971). The literature mirrors Dr. Gish's concern; few reflect his implied optimism about the ability of developing countries to solve these kinds of problems.

The basic literature texts in the area of physician manpower are included in Chapter V , List B.

2. Nurses and Midwives

The literature in this area is extensive due in no small part to the critical role these personnel play in the health services delivery systems of the developing countries. With fully one-third of most LDCs (less developed countries) populations being under the age of 10 years (WHO statistics) and with LDC popula-

tion increases in the range of 2.5 - 3.0% (versus 0.5 - 2.0% in most developed or industrial countries) the nurse-midwife is essential.

In addition, LDCs normally have from 50 to 90% of the population in rural areas or new urban "shantytowns" (compared with U.S.A. 10% rural and U.K. 5%) which aggravates an already difficult prevailing situation. To continue the comparisons: 50+ % of all diseases in LDCs are in children under 5 years (forty times higher than in industrialized nations) while developed countries have 50+ % of their diseases in the heart and blood vessels of adults 50-70 years old. (Gish, 71). Third world nations, then, primarily have diseases of poverty while industrialized nations have a considerable incidence of diseases due to stress.

Nurses and midwives are known throughout the Third World by a variety of titles. Indeed, one of the key issues in this area is the standardization of occupational titles around certain easily comparable criteria (education level, years of experience, training depth, etc.)

From a brief overview of the literature, there are at least the following nurse categories: degree nurse, diploma nurse, licensed practical nurse, auxiliary nurse, ward helper, community nurse, health visitor, public health nurse, midwife, auxiliary nurse-midwife, village midwife, trained dai, village medical worker, and others.

The literature in the nursing/midwive area includes the key sources shown in Chapter V , List C.

3. Physician's Assistants/Auxiliaries

In the narrowest sense, auxiliaries can be used to signify any of a wide ranging group of paraprofessionals which include: Felsher (Russia); Behdar (Iran); Health Officer, Licentiate (India & Pakistan); Medical Assistant (Africa and Pacific); Dressers, First Aid Man, Medical Corpsman, Village Health Worker, Technical Assistants, and so forth. The literature on these workers is large. Pertinent sources in this area are shown in Chapter V , List D.

4. Health Teams, Technicians, and Dentists

The artificial aggregation of these diverse sets of health personnel has been made for the purposes of brevity and not because of any desire to actually assess each of these groups. Indeed, in the final assessment manual for this project, each of these sets is enumerated.

Health teams are coming to be seen in the literature as an increasingly effective manner in which to meet the demand for health services. Usually teams are composed of a physician, a nurse, public health technicians (sanitation and the like), and auxiliaries as necessary. Teams may be composed of any number of personnel in any number of combinations. Team composition is largely a question of geographical area, availability of personnel and funds, and health policy directions within the specific country. Bryant (1969) has detailed health team issues especially well.

In the developing countries, as a health field, dentistry is largely neglected. Demand for dental care outstrips any developing country's ability to supply sufficient numbers of dental personnel. According to Hall (1969) and others, productivity in the dental professions is low by present-day standards; dentistry equipment is often in poor repair or altogether lacking; very few dentists augment their work with auxiliaries; and prevention receives little attention as palliative dentistry consumes the majority of the efforts.

The situation with various other technicians is equally problematic. Laboratory, X-ray, and others are equally unable to meet the demand for their services in most LDCs. Training is often over-specialized for the final job placement opportunities. Pharmacists have in most cases had their jobs reduced from professionals (mixing certain drugs together to make useful prescriptions) to glorified clerks (dispensing prepackaged pharmaceuticals, often imported). This has served to discourage many in this manpower area. Sanitarians, vaccination workers, leprosy officers, tuberculosis visitors, malaria and sleeping sickness officers, and many others have similar stories.

Pertinent sources in this area are shown in Chapter V , List E.

5. Health Center Staffing

With the increasing inability of less developed countries (and even many developed ones as well) to meet the health needs of their population, especially in the rural areas, the establishment of health centers or health posts has gained popularity. These outreach stations are in many cases the sole access to qualified, modern medical care available for the overwhelming majority of the population.

Given this situation, the staffing of health posts/centers, their location and skills offered, the financing, and questions of standards, among others are receiving increasing attention in the literature and at planning sessions, both internationally and within LDCs.

The pertinent sources in the literature dealing with such health units, either exclusively or in part, are shown in the Chapter V , List F.

B. Supply Projection

The second half of the assessment of supply behavior (after analyzing and enumerating present supplies in various categories as stipulated above) is the question of projecting various future health manpower levels. This, when correctly done, becomes the basis of manpower policy for subsequent years. This section deals with four issues in the area of supply projection: methodologies for projecting supply, issues in medical education, health training inputs into supply projections, and assessment of productivity in the supply projection equation.

1. Projection Methodologies

Projecting manpower levels is, of course, established upon the basis of assumptions about what will happen in the future. Usually in the developing countries it has been found that the assumptions about the future are in themselves so variable as to require multiple projections based upon the same data, but different interpretations of how the future will manipulate such data. If the basic assumptions are so clearcut as to not require multiple projections, then the resulting projection approximates being a prediction in the narrow sense of that word in the planning professions.

Essentially, all supply projection methodologies addressed in the literature concern themselves with ways to determine how many trained professionals of a given type will be "produced" over a given time period. To do this requires at least two steps: (1) various aspects of medical education and health training (the primary sources of manpower) must be analyzed so as to accurately project

production output in the future; and (2) the numbers of each group or category of personnel must be assessed from the perspective of attrition, i.e., how many of those presently in the profession are likely to drop out of the job in the period chosen to project. Given this two-pronged approach, the literature describes various ways in which to predict output and attrition.

Those sources dealing with these issues are shown in Chapter V , List G.

2. Mecical Education

This section differs from the one that follows in that it considers professional medical education of physicians, nurses, and other medical categories; the "health training" section which follows deals with the less rigorous and less costly training of technicians and auxiliaries.

Medical education in the developing countries has been the subject of considerable discussion in the literature, much of it concerning standards and comparability of personnel produced. It seems safe to say that there is increasingly a feeling in the literature that education of physicians, for instance, should include some managerial aspects of team leadership for proper physician utilization in rural areas. These topics also begin to interface with the "brain drain" and urban-rural distribution issues (see elsewhere in this report) as medical education increasingly becomes tied in the developing countries to forms of "stay-in-your-own-country-and-practice-in-the-rural-areas" incentives.

Much of the data gathered in assessing the medical education situation in any given developing country may be used for both analysis and projection. A sample listing of types of information in this area to be gathered in order to make health sector assessments in manpower is provided by Dr. Thomas Hall in his pioneering work, Health Manpower in Peru:

" The following information was sought from professional faculties and schools:
- Number of graduates and revalidations of foreign professional degrees, by year and sex.
- Enrollment by year of study and sex; number repeating studies when available.
- Number of applicants for admission and of those rejected for lack of space; number considered qualified for admission.
- Amount of money spent and amount of money budgeted by expenditure category.
- Programmed intake and planned changes in the length and/or nature of the curriculum, or in the entrance requirements.
- Number of faculty positions budgeted, filled, and additional faculty positions desired, by faculty rank and time (part time, half time, etc.). For nursing and midwifery schools, the basic profession (physician, nurse, etc.) of the employed faculty." (Hall, 1969)

Much of the literature in this area suggests the gathering of similar kinds of data for supply projections. Literature in the area of medical education, for both supply analysis and projection, is included in Chapter V , List H.

3. Health Training

As previously indicated, this subsection deals with issues in the training of physician's assistants, auxiliaries, and sub-professional levels of medical manpower. Assessments of both present supply and future available supply are found in a wide variety of the literature as this area of health personnel has certainly received the most attention in recent years.

Present supply is a matter of surveying the training institutions for the numbers of personnel by category graduated in the previous years (however many is necessary for adequate assessment or is practical) and the same information for present enrollments. Dropout rates are solicited as are programmed changes and other issues. These data are factored into the various equations available for computing present su-ply levels.

Future supply methodologies are largely a factor of the availability of data and the sophistication of the planning units involved. Two methods which deserve brief mention in this section are the life table method and the cohort method. Life table method consists of choosing a life expectancy curve that one assumes will correlate with the actuality of the given country's professional medical personnel (for a variety of country-specific reasons) and apply the derived rates to decade-selected combinations of categories to project the number who will survive to a given year. Life expectancy tables are widely used in the literature for this and a variety of applications. One issue in this method is choosing the right life expectancy curve. Another is that this approach does not factor in other reasons for removal of manpower from the supply pool; that is, it assumes only death as a removal cause and disregards retirement earlier than usual, job changes, or emigration.

The cohort method compares the number of medical personnel in each category, licensed or trained in that 10-year period, with the number found active in a census which corresponds to the same cohort of personnel in a previous decade. Using this approach, loss per each ten-year period as a function of time can be calculated and the observed rates of loss applied to the present supply so as to determine the number likely to be still in that capacity, say, two or three decades hence. This method is unusually useful since all factors of dropout (death, emigration, early retirement, etc.) are factored into the methodology and, therefore, not inadvertently excluded.

These two methods are but two of the basic methodologies in supply projection technology in use at this time. The literature provides further data on these issues, but primarily from a health training perspective. Once again, these sources are firts training sources, and only secondarily references of a methodological nature.

Sources are shown in Chapter V , List I.

4. Productivity Analyses

Analysis of productivity (and utilization -- see section IV.D) in the health manpower field is at this time a function of information gathered in supply assessment procedures. Traditionally, productivity data are gathered on the number of patients a physician is able to treat per hour, week, day, etc.; numbers of immunizations, auxiliary nurse home visits, sanitary inspections, dental checkups, etc., all per some time frame usually based on a person-hour and statistically inferred for population sets. These data then are estimated in terms of per capita ratios and compared with other regions, sectors, countries, etc.

The literature dealing with these issues are shown in Chapter V , List J.

CHAPTER III: ASSESSMENT OF DEMAND BEHAVIOR

A. Demand Analysis

The pioneering work in health manpower demand has been done by the Johns Hopkins University team mentioned earlier in this paper. Their isolation of four basic demand analysis methodologies remains the standard in the field, though variations on the themes developed by Drs. Baker, Ferguson, Hall, Haynes, and Taylor have provided significant input.

One may conceptualize the demand for health services into the following four question areas:

(1) What health services do people want? This has become known as biologic demand.
(2) What health services do the professionals in the field think the people need: This is known as normative or empirical demand.
(3) What services are people willing to pay for? This is economic or effective demand.
(4) What services do the professionals think are technically capable of being provided? This is generally known as functional or rationalized demand.

As is readily apparent, each of these, while independent of the other in some respect, approaches the problem of demand for health services from an essentially necessary perspective. The experts stress, however, that "no single methodological approach to demand analysis can provide a satisfactory basis for planning." (Baker, et.al. 1968) Rather, each planner must compose a set of demand instruments which will accurately and effectively measure demand for his/her country specific situation based upon one or more combinations of these methods (or others) as appropriate.

Detailed descriptions of these four approaches to demand analysis are provided in the literature. (See Baker, Hall, and others of the Johns Hopkins group). In addition to the classics in the field indicated earlier (which address this issue in detail) the Chapter V list K includes references useful in demand analyses areas.

B. Demand Projection

Providing reasonable estimates of future demand for health manpower is a difficult task complicated by the unusually long lead times required for the preparation of most medical and allied health professional personnel. For physicians and other highly skilled personnel, it is necessary to anticipate demand one or two decades in advance of need due to the fact that it normally takes ten or more years to move the potential physicians through the education and preparation needed in order to make them job ready. Further, as Thomas Hall points out, manpower planning is not the same as program planning; to have one's health manpower plan detailed down to the program level would make it extremely complicated, largely unrealistic, and possibly untenable. Finally, demand project must take into consideration the ability of the developing country to support the personnel levels planned and the problems or issues likely to prevail at the time. The health manpower planner is trying to guage the numbers of personnel needed for a given future date; the program planner will then decide utilization and distribution issues (in reality the manpower planner does not neglect these issues, but details for those lead times would be unrealistic).

Demand projection models abound in the literature. One U.S. DHEW commissioned survey indicated some 56 current models in this area and details each. For the purposes of this document, a catalogue of sources in this area is sufficient.

Sources in the literature in the area of demand projection are shown in Chapter V , list L.

C. Economic Constraints

The financing of health manpower planning issues in the developing nations is very much to the point of this document and the accompanying manuals on related subjects. Obviously financing is paramount since the ability to pay for the training, to support the distribution, to create the mobile or fixed health facilities in which to place health manpower, and many other basic issues all begin with economic considerations. Fortunately, the literature abounds with information in this area.

In addition to the major works in the field cited above, detailed information on the issue of economics is provided in the references shown in Chapter V , list M.

CHAPTER IV: ASSESSMENT OF BALANCE BEHAVIOR

This chapter concerns itself with various "behaviors" which characterize a developing country's attempt to "balance" the supply/demand equation in its health manpower components. Of issue here will be how the nation administers, organizes, distributed, utilizes, plans, and evaluates its health manpower as well as some comments on the migration of medical personnel from developing to developed countries.

A. Administration

How a country administers its health sector will, in large part, determine both the quality and quantity of service received by the patient; indeed, whether or not any health service is available is more often the result of countrywide healty policy administration. While it generally is not possible to separate health administrative personnel into special groups for study due to the functional diversity of this group and the many categories likely to be encountered, administration as an issue has been addressed in the literature.

One of the more striking facts about health care administration in the developing countries is that, in most instances, no specific managerial or administrative training is provided for health sector personnel. Rather, a situation obtains which finds key health decision makers having little or no public health, social science, statistical, or administrative training. This is due to the fact that most of these key decision makers are in fact the outstanding clinicians in the country who have been promoted to heads of health ministries and the like.

Several remedies to this situation have been suggested in the literature. These include orientation and refresher courses in management, procedures manuals, increased attention to personnel incentives, and restructuring of advancement and salary scales among others. Several countries have begun taking such steps; the effects will be seen in time.

Literature sources which provide useful information in the area of administration and its ability to balance the supply/demand equation are shown in the Chapter V , list N.

B. Organization

While it is recognized that "administration" overlaps significantly with "Organization", these two subsections are separate in this paper because effective assessment of manpower policy and efficiency cannot be discussed without a consideration of the effect that the organization of services has upon service outcome. To a great extent, organization determines what will be produced in the way of services, what they will cost, what materials or equipment will be utilized, and who will receive the benefit of such services. Widely differing viewpoints on these issues exist in the literature. Often these differences have a political or ideological base.

The majority of the sources referenced agree that access to the health services delivery system should be organized, to a greater or lesser degree,

so as to provide preferential treatment to certain groups. The argument presented is that to achieve the most desirable rate of economic growth and development, those groups which are economically productive (as witnessed by their accumulation of riches or skills to earn money, which in turn develops "wealth" for the nation) should have maximum accessibility. The argument continues that the differences between varying segments of the developing countries' population (with respect to health service accessibility) are "facts of life" cannot be denied for the forseeable future, and that economic growth must continue to recognize these facts. In essence, the rich can and should continue, the agrument goes, to receive the best health services.

Despite these "facts", the literature also points out the need for developing countries to widen their provision of services (through organization in a different fashion) to the rural poor. Economically speaking, this argument contends that excessive concentration of health services in such a manner so as to benefit a relative few is bad business. Rather, what developing countries should do, it suggests, is make health services widespread and accessible to the rural poor so that a goodly supply of healthy workers will be available for the nation's economic growth.

Roemer (Medical Care in Latin America, 1963) suggests that organization of the essentially "closed" system that presently exists into an "open" one around a national health service could provide for "preferential access" to a wider segment of the population and to those groups which policy-makers decided were the most essential to planned development. Other organizational measures have been suggested and are detailed in the literature as shown in Chapter V , list O.

C. Distribution/Access

The awareness of the far greater concentration of health care personnel in urban areas of developing countries is legion. That redistribution of manpower is required is self-evident. Whether or not developing countries will be able to persuade health personnel to relocate is far less clear. However, much of the literature indicates that the taking of personnel from the cities and distributing them throughout the rural areas, need not necessarily mean a lessening of the per capita service capability to urban residents if a concomitant increase in productivity is achieved.

Access to adequate health services is becoming more and more a high priority item throughout the Third World. In part this is due to the altruistic motivations of developing countries' health ministries, and in a larter part due to the economic issues discussed earlier in this paper. How to facilitate the increased access of the rural poor to the health systems currently is and will for some time continue to be a critical issue in manpower planning. Auxiliary workers who are trained in shorter periods of time than physicians; and increased numbers of rural health posts where primary care is given comprise only two of many approaches available to LDCs. Approaches are described in the selected literature referenced in Chapter V , list P.

D. Utilization

Issues in this area border upon the organizational and administrative questions raised earlier, but they are unique in that "usefulness" as a primary problem seems to be one of the enigma facing developing countries. The literature indicates a wide ranging number of institutions and quasi-institutions

which play a part in the health service delivery drama. Hall provides a convenient listing:

"Training Institutions: Professional and Technical. Faculties of medicine, dentistry, pharmacy and sanitary engineering. Schools of nursing, midwifery, social work, public health, and technicians. Interschool Associations (medicine and nursing).

"Service Institutions: Ministries of Health, War, Air, Navy, Education, and Interior. Social insurance funds. Charity Institutions. Private Hospitals and clinics. Municipalities and other local government institutions.

"Professional Associations: Associations of physicians, dentists, pharmacists, nurses, midwives, social workers, and others. Legally constituted professional colleges (dentistry and pharmacy).

"Policy making and coordinating Bodies: With representation from the consumer public. Inter-University Council (for the universities). National Education Council (for the Ministry of Education). National Health Council (for the Ministry of Health). National Development Council (for investments).

"Planning Bodies: Health sector planning office (dependent on the Ministry of Health: for the entire sector). Programming Offices (administratively dependent on each public agency concerned with health: technically dependent on the health sector planning office). Education Sector Planning Office (dependent on the Ministry of Education; for primary, secondary, and technical education). University Sector Planning Office (dependent on the Inter-University Council: for higher education)."

(Hall, 1969, pp.242-242)

Within this structure, utilization of personnel becomes an increasingly significant area of concern for researchers and participants. Some of the literature sources in this area are included in Chapter V , list Q.

E. Migration

The question of the international migration of professional medical personnel is one often discussed and debated in the literature. There can be no doubt that in the area of physicians, the so-called "brain drain" is reaching alarming proportions. Oscar Gish reports that of the 80,000 medical school graduates produced annually (8K in U.S., 30K in USSR and other socialist nations of East Europe), some 40,000 comprise the "at risk" pool with respect to emigration. In 1969, 23,000 or over 1/3 of the "at risk" population took the Educational Council for Foreign Medical Graduates examination (the ECFMG is now banned in several developing countries) which allows hospital work in U.S. institutions. Of these 23K, some 8,000 passed the ECFMG or 1/5 of the "at risk" group. Some 4,000 took various U.S. State Board examinations which, when passed, grant full licensure to practice in certain of the United States, and 2,300 passed (or some 17+% of all non-U.S. citizen, non-Eastern bloc physicians produced in that year). Estimates of the total number of migrating physicians average around 1/8 of the world's total medical school output per year (excluding U.S. and Socialist countries). The total number leaving is probably 4 or 5 times greater and may number 40,000 annually. (Gish, 1971)

These figures indicate the magnitude of the issue. The damage to any one country is hard to assess; Pakistan, for example, during the years 1962-1965, lost some 2,300 M.D.'s or 55% of all the physicians produced by its medical schools during that period.

However, some who accept the marketplace as the final judge of this issue argue that ther is, in fact, not a "brain drain" but simply an unfortunate "overflow" to those countries able to support an adequate economic demand. Gish has succinctly described the situation:

"(A) Doctors are trained in keeping with the values and requirements of those with money incomes sufficient to purchase private medical care; at the same time, the 'native practitioners' who are the only ones able to meet the effective economic demand of those with very small (or no) money incomes, are labelled as quacks and either barred from practice outright or forced to operate without benefit of state support either for facilities or training.

"(B) There is increasing pressure for the training of greater numbers of doctors. This pressure stems from the growing demand for higher education for the children of an expanding middle class, and to create more satisfactory doctor/population ratios than are presently to be seen.

"(C) The very expensive training costs of medical doctors (which are so high just because they are trained in keeping with private sector traditions) means that the level of effective economic demand of most of the population cannot possibly meet the expectations/requirements of these graduates to those parts of the world where demand is greater than the current supply of doctors, most notably North America." (Gish, 1971, p.117)

These issues are pertinent when considering other classifications of health personnel as well. Sources in the literature dealing with these issues are shown in Chapter V , list R.

F. Planning/Evaluation

Evaluation of the planning in the manpower sector of any developing country's health sector is a multi-fold process composed of at least the following:

(1) Collecting, analyzing, and comparing information in the health manpower area for the purpose of fostering better decisions;

(2) A necessary leadership and management tool for improving instruction of personnel and tailoring teaching of health skills in the most appropriate way;

(3) An informed, hopefully objective judgment of progress that enables an on-going and increasingly sophisticated level of planning based upon ever improving data sources;

(4) A dynamic process that encourages participants to recognize that progress measurement is useful in achieving satisfaction for having met planned goals.

The literature in the area of evaluation models and planning tools abounds. The more germane references are included in Chapter V , list S.

CHAPTER V: SELECTED REFERENCES BY CATEGORY

LIST A

Baker and Perlman (1967)
Baker, Ferguson, Hall, Haynes, and Taylor (1968)
Baker (1972)
Lee and Jones (1933)
Fendall (1972)
Gish (1971)
Gish (1975
Gish (1977)
Hall (1966)
Hall (1969)
Hall (1978)
"Health Manpower Planning Process: (1976)
King (1966)
Kreisberg, Wu, Hollander, and Bow ; vols. I & II (1976)
Krystynak (1974)
The Syncrisis Series I-XIX (1972-1976)
Taylor (1967)
U.S. Health, Education, and Welfare, "Analysis of Health Manpower Models" (1974)
"Inventory of Health Manpower Models" (1975
"Assessment of Health Manpower Modeling Efforts" (1976)
Van Zile Hyde (1966)

LIST B

American Medical Women's Association (1968)
Brehman (1973)
Butter (1973)
Charles (1972)
Fein (1967)
Gish (1971)
Illich (1976)
"Prelinimary Estimates..." (1973)
Schwartz (1971)
Taylor (1976)
World Health Organization - WHO "Current Data..." (1976)

LIST C

Altman, S. (Measures) (1971)
Altman, S. (Supply) (1971)
ANA Directory (1975)
WHO Nursing Bibliography (1975)
Hausmann, Dieter, Megyvany, and Newman (1975)
Historical Surveys/AID (1967)
Isaacs (1977)
Meglen and Buret (1974)
Pissevelt (1976)
Sloan (1975)
U.S. DHEW; Planning for Nursing (1973)

LIST D

Adamson (1971)
Andrus (1968)
Baker (1971)
Bible (1972)
Boohene (1972)
Brooke (1973)
Browne (1973)
Bryant (1969)
Chen (1973)
Deuschle (1963)
Elliott (1973)
Fendall (1968, 1971, 1972, 1976)
Feuerstein (1976)
Fountain (1972)
Gish (1971)
"Health Aide..." (1969)
Howard University Conference (1975)
Johnsson (1975)
Kim (1977)
Kleinback, Rapoport, and Hays (1973)
Landes (1969)
Medical Auxiliaries/PAHO (1973)
Medex (1974)
Neumann, Bhatia, Andrews, and Murphy (1971)
Paxman (1976)
Pitcairn and Flahault (1974)
Problem-Action Guidelines (1974)
Reference Material... (1976)
Reiff and Riessman (1964)
Riess and Lawrence (1976)
Rosinski and Spencer (1965)
Russell (1976)
Sadler, Sadler, and Bliss (1976

LIST D (cont.)

Sone (1971)
Sigel (1976)
Smith, R. et.al. (1973)
Vaughan (1971)
WHO/Auxiliary Health (1972)

LIST E

Bell (1973)
Bryant (1969)
Fendall (1968)
Long (1972)
Napier (1972)
Reiff and Reissman (1964)
WHO/ Methodology of Team... (1972)

LIST F

Byer, Dyer, Gourlay, and Standard (1966)
Cartaya (1975)
King (1970)
Lee, Gianturco, and Eisdorfer (1974)
Leyasmeyer (1976)
Morgan, Baldwin, Jezowski and Teasdale (1974)
Ronaghy, Mousseau-Gershman, and Dorozynski (1976)
Sherman (1973)
Tuskegee (1973)
U.S.DHEW "Building..." (1976)

LIST G

Bergwall, Reeves, and Woodside (1974)
Bezdek (1974)
California HPA Study (1969)
Detwiller (1975)
Eckles and Summer (1970)
Galiher (1975)
Gish (1971)
Goldstein (1965)
Hall (1973)
International/Generic Model (1973)
Kreisberg, Wu, Hollander, and Bow (1976)
Schwartz (1971)
"The Supply... 1990"(1974)
USHEW/ "Descriptive: (1975)
USHEW/ "Health Planning" (1975,1976)

LIST G (cont.)

USHEW/ "Supply" (1974)
USDOL/ "Forecasting" (1963)
WHO/ Health Manpower Planning (1971)

LIST H

Ali, Beckett, and Dowling (1972)
Bennett (1973)
Bevan, Manson-Bahr, Pinkerton (1970)
California HTP Study (1974)
Foster (1958)
Majekodunmi (1966)
Muramoto (1973)
National Profile (1976-1977)
Prywes (1968)
Purcell (1971)
Reinhardt (n.d.)
"Retention..." (1977)
Roundtable Conference (1964)
Study of Medical Education (1964)
Study on Medical Education (1965)
"The Teaching...Latin American Medical Schools" (1973)
USHEW/ Classification (1975)
USHEW/ Study of Medical Education (1975)
USHEW/ Variables (1975)
WHO/ International acceptable Standards (1962)

LIST I

Canada's DNHW Study (n.d.)
Deuschle (1963)
Dowling (1969
Fendall (1963, 1972)
Flahault (1973)
Gish (1975)
Guilbert (1974
Hall (1969)
Hill (1971)
Howard University Conference (1975)
Isaacs (1977)
King (1970)
Kleinback, Rapoport, & Hayes (1973)
Landes (1969)
Lobo (1975)
Long (1972)
Muromoto (1973)
O'Brien, Fiedler, and Hewett (1969)

LIST I (cont.)

"Physician Suppor..." (1975)
Problem-Action Guidelines (1974)
Ronaghy, Mousseau-Gershman, and Dorozynski (1976)
Rosinski and Spencer (1965)
Sein (1971)
Seventeenth Report / WHO (1968)
Snyder (1975)
Van Ettien and Raikes (1975)
Van Ettien (1972)

LIST J

Ehrereich and Ehrereich (1973)
Functional Analysis (1970)
Gish (1971)
Haavio-Mannila (1975)
Isaacs (1977)
Laskin (1977)
Martin (1975)
Muramoto (1973)
Muskin (1974)
Napier (1972)
Newell (1975)
O'Brien, Fiedler and Hewett (1969)
Orubuloye and Caldwell (1975)
Smith, K. (1975)
WHO/ "Meeting Basic Needs..." (1975)

LIST K

Hall (1966, 1969, 1973)
Majia in Fulop, et.al.(1975)
Feldstein (1964)
U.S. DHEW/ Health Planning (1976)

LIST L

Bezdek (1974)
Dars (1973)
Detwiller (1975)
Eckles and Summer (1970)
Feldstein (1964)
"Functional Analysis" (1970)
Gish (1971)
Goldstein (1973

LIST L (cont.)

Hall (1969, 1973)
International/ Generic Model (1973)
Kreisberg, Wu, Hollander, and Bow (1976)
U.S.DHEW/ Health Planning (1976)

LIST M

Abel-Smith (1976)
Berkowitz (1970)
Block (1974)
Fein (1967)
Foster (1958)
Frei (1975)
Gerlach (1977)
Gish (1975)
"Health Care..." (1975)
Heller (1975)
Muromoto (1973)
Newell (1975)
Reinhardt (n.d.)
Schaefer (1975)
U.S. DHEW/ Personal Expenditures... (1973)
Van Zile Hyde (1966)

LIST N

Ahmed (1977)
Beck (1970)
Bridge (1974)
Chang (1970)
Denny (1974)
Emery, Frerichs, and Severn (1976)
Erbstoszer (1974)
PAHO Conference (1974)
Garcia (1971)
Gish (1977)
Health Manpower/ Syrian Arab Republic (1976)
Kauffman (1974)
Kim (1977)
King (1970)
Paxman (1976)
Pearsall (1973)
Quinn (1973)

LIST O

Ahmed (1977)
Anderson; vols. II and III (1970)
Erbstoeszer (1974)
Feuerstein (1976)
Fountain (1972)
Garcia (1971)
Gish (1977)
Kauffman (1974)
Kim (1977)
King (1966, 1970)
Quinn (1973)
Roemer (1968, 1963, 1973)
Sene (1971)
Smith, D. (1972)
Systems Analysis (1976)

LIST P

Badgley (1971)
CMA Study (1973)
Coleman (1976)
BHRD/RAS #74-192 (1974)
Eberle, Gonzales and Mortimer (1973, 1974)
U.S.DHEW-HRA #75-3 (1974)
Fendall (1972)
Galiher (1975)
Gish (1971, 1975, 1977)
Goldstein (1973)
Haavia-Mannila (1975)
Hassouna (1973)
Heald (1972)
Napier (1972)
"Retention" (1977)
Reiss and Lawress (1976)
Sloan (1975)
Smith, D. (1972)
Stahl and Gardner (1976)
"Ten Year Plan" (1973)
U.S.DHEW/ The Priorities... (1977)
WHO/ Distribution (1975)
WHO/ Health Manpower Planning (1971)

LIST Q

Akhtar (1975)
APHA (1973)
Benjamin (1971)
Benyoussef (1974)
California Task Analysis (1970)
Fendall (1967, 1972)
PAHO Conference (1974)
Flahault (1973)
Gerlach (1977)
Gish (1977)
Goldfarb (1973)
Haavio-Mannila (1975)
Hassouna (1973)
"Health Manpower Sourcebook" (1969)
Health Sector Assessment/ El Salvador (1976)
Heller (1975)
Hershey, Luft, and Gianaris (1975)
Howard University Conference (1975)
Illich (1976)
Jazairi (1976)
Kauffman (1974)
King (1966)
Kohn and White (1976)
Mushkin (1974)
O'Brien, Fiedler, and Hewett (1969)
"Retention" (1977)
Riess and Lawrence (1976)
Roemer (1968, 1975)
Sene (1971)
Setawer (1976)
Sherman (1973)
Smith D. (1972)
Smith K. (1975)

List R

Butter (1973)
U.S.DHEW-HRA #75-3 (1974)
Fein (1967-Book, 1967- Report)
Gish (1971)
Glaser (1973)
Health Conditions (1974)
King (1966)
Luft (1970)

LIST S

Akhtar (1975)
Altman,I. (1969)
Anderson (1970)
Huang (1974)
Butter (1967)
Cooke, Pines, Rusch, Swanson and Fried (1973)
HEW Simulation Model: Dowling (1969)
Emery, Frerich, and Severn (1976)
Alaska Native Health Board (1977)
"Functional Analysis..." (1970)
Goldfarb (1973)
Gish (1971)
Hayes (1959)
Health Conditions (1974)
Health in Africa (1975)
Health Manpower/ Syrian Arab Republic (1976)
Helmick, McClure and Nutting (1977)
Hill (1971)
Jazairi (1976)
King (1966)
Landes (1969)
Laskin (1977)
Majekodunmi (1966)
Morgan, Baldwin, Jezowski, and Teasdale (1974)
National Center Model (1970)
Neumann, Bhatia, Andrews, Murphy (1971)
Newell (1975)
Orubuloye and Caldwell (1975)
Pearsall (1973)
Roemer (1975)
Ronaghy, Mousseau-Gershman, and Dorozynski (1976)
Schulberg, Sheldon, and Baker (1969)
Sene (1971)
Some Practical Concepts (1971)
Somers (1971)
USHEW/ Baselines (1976)
U.S.DHEW - Priorities (1977)
U.S.DL Manpower Planning (1974)
White (1975)
WHO/ Health Manpower Planning (1971)

CHAPTER VI

ANNOTATED BIBLIOGRAPHY

HEALTH MANPOWER PLANNING

1.

Abel-Smith, Brian. Value for money in health services: a comparative study. Heinemann, 1976.

This article discusses health planning in developing and developed countries. It includes analyses on how they organized health service delivery as well as descriptions of various financing situations. It provides an adequate mix of theory and experiential situations.

2.

Adamson, T. Elaine. "Critical issues in the use of physician associates and assistants." Am. J. Public Health, 61, 1765-79. S '71.

The article provides useful discussion of specific parameters related to the question of physician's assistant. It covers legal issues, the question of standards and certification, and related topics.

3.

A Directory of Programs Preparing Registered Nurses for Expanded Roles 1974-75. Kansas City, Missouri: American Nurse-' Association, Inc., Washington, D.C.: U.S. Department of Health, Education and Welfare, Public Health Service, Health Resources Administration. 1975.

This is a useful compilation of programs including detailed nursing project information.

4.

Ahmed, Paul. Contributions and Dissemination of... Country-Specific Health Information. Washington, D.C.: Office of International Health, HEW. 1977.

This document summarizes a one-day conference to evaluate the Syncrisis: The Dynamics of Health and Socioeconomic Development series. Syncrisis studies are prepared within the Office of International Health at the request of, and with the support of, the U.S. Department of State's Agency for International Development (AID). Each country-specific report "describes and analyzes health conditions of a country and their interrelationships with and impact on socio-economic development." The reports are used to provide "... a concise, organized, and up-to-date introduction to the health situation in a country for use by AID...." Syncrisis then is intended mostly as

background information and does not necessarily include recommendations for action. This present document provides discussions on the relationships between health conditions and socio-economic development, how Syncrisis relates to program planning and policy development, dissemination of information, and data assessment.

5.

Akhtar, Shahid. Health Care in the People's Republic of China: A Bibliography with Abstracts. Ottawa: International Development Research Centre. 1975

The material presented in this bibliography is based on the assumption that its users will be persons from developing countries. Other users will be those concerned with training health auxiliaries essential to the staffing of health services systems. Information is presented showing the impact health services have on social and economic indices.

6.

Akhtar, Shahid. Low-Cost Rural Health Care and Health Manpower Training: An Annotated Bibliography with Special Emphasis on Developing Countries, Volume 1. Ottawa: International Development Research Centre. 1975.

The abstract is a classic in the health manpower field and is indispensable for adequate coverage of this planning area. This is evident in the following direct quote: "An attempt to coordinate information on nontraditional health care delivery systems in remote regions of the world, especially in developing countries. The literature abstracted focuses primarily on new models of health care delivery, and on the training and utilization of auxiliary health workers. It is intended to be of use to: persons involved in planning... persons concerned with the training of auxiliary health workers... and organizations that are supporting research into the problems of organizing and staffing."

7.

Ali, D.S.; Backett, E.M.; Dowling, M.A.; El Borolossy, A.W. Aspects of Medical Education in Developing Countries: Selected Papers Presented at the Second WHO Conference of Medical Education. Geneva: WHO Public Health Papers, Number 47. 1972.

This article discusses the objectives of medical education in developing nations, medical curricula, student evaluation of medical education, integrated teaching techniques, establishment of new medical schools, as well as the particular problems of medical education in Iran and the Eastern Mediterranean Region.

8.

Altman, Isidore; Anderson, Alice J.; Parker, Kathleen. Methodology in Evaluating the Quality of Medical Care. Pittsburgh: University of Pittsburgh Press. 1969.

This methodology was compiled by a professor of biostatistics at the graduate school of public health, University of Pittsburgh. The document, which is a useful reference tool, is a collection of abstracts and references. It provides a condensed view of source materials in the health evaluation area. Listings are classified into four

groups: standards and recommendations, elements of performance, effects of care, and general approaches.

9.

Altman, Stuart H. "Alternative Measures of the Regional Availability of Nursing Manpower." Economic Business Bulletin, 24 (1) 68-75. Fall 1971.

Though it is specific to U.S. sources, this article provides important methodological contributions for assessing nursing status and availability in the health manpower field.

10.

Altman, Stuart H. Present and Future Supply of Registered Nurses. DHEW No. (NIH) 72-134. Bethesda, Md.: U.S. Department of Health, Education, and Welfare, 1971.

This is a definitive work on the subject (U.S. references only). It deals with important methodological questions in the assessment of the supply of registered nurses. Demand issues, however, are covered only peripherally.

11.

American Medical Women's Association. The Fuller Utilization of the Woman Physician. Washington, D. C.: The President's Study Group on Careers for Women, Women's Bureau, U.S. Department of Labor. 1968.

This is a report of a conference on "meeting medical manpower needs" sponsored by the U.S. Department of Labor. Useful articles are included on the utilization of women in medical manpower situations. Baumgartner's article on the challenge of fuller utilization is especially interesting.

12.

American Public Health Association, Study of National Voluntary Health Organizations (VHOs) Pilot Demonstration Projects Interim Evaluation Report. Washington, D.C.: U.S. Department of State's Agency for International Development. 1973.

This report analyses two nations voluntray health organizations, one in Costa Rica and the other in the Philippines, in order to determine changes that occur in national voluntary health organizations when limited financial and technical assistance is introduced over a two-year period; implications and results of the effects of these changes on manpower are included.

13.

Anderson, James G. Remote Area Health Services: Southwest New Mexico. Volume I: Design, Development and Accomplishments. University Park, New Mexico: New Mexico State University. 1970.

This report assesses current health needs in a limited area of rural New Mexico. First,

it devises a rational system for meeting needs by utilizing fully existing health care systems. It then provides suggested additions of new facilities, methods, and technology for meeting the revealed gap in services. It is a useful contribution to the present study in health systems evaluation methodology.

14.

Anderson, James G. Remote Area Health Services: Southwest New Mexico. Volume II Implementation. Volume III Evaluation. University Park, New Mexico: New Mexico State University. 197C.

The volumes report on the feasibility of installing a system of health services delivery for a rural population. This is done through the use of technology and innovative manpower and transportation systems.

15.

Andrus, Len Hughes. "Paramedical Personnel and Private Practitioners". Stanford Univ., Calif. School of Medicine. Hospital Practice, 3, 64-72, Dec. 1968.

This is a study of the use of trained paramedical personnel. Case histories illustrate ways aides have helped break down barriers that keep the poor from seeking and receiving care. The benefits derived from applying such procedures are detailed.

16.

"Annotated Bibliography of Teaching - Learning Materials for Schools of Nursing and Midwifery". World Health Organization, Geneva (Switzerland). 1975.

This bibliography is designed for use in the nursing school curricula. The following areas are included: community and family health, sciences, nursing care, nursing administration and management, nursing educations, nursing theory and trends, and nursing research.

17.

A Progress Report on Medex Programs in the United States 1969-1974. Washington,D.C.: The National Council of Medex Programs. 1974.

This document provides an updated look at the national program of medical extension workers in the U.S. Nine national programs have been training assistants to be primary care physicians. The report discusses the distribution and characteristics of Medex practitioners and their impact on medical care delivery. It also evaluates the acceptance of the Medex role by consumers, physicians, and the Medex themselves. Additionally, the report provides a significant review of a viable program intended to broaden the services of the physician.

18.

A Report of Round Table Conference. "Health Manpower and Medical Education in Latin America." Milbank Memorial Fund Quarterly, 1964, 42 (1), Jan.,11-66.

This report contains conference results on manpower and medical training in Latin America. Although the information is somewhat dated (almost 15 years old) it is useful from the historical perspective.

19.

Assessment and Evaluation of the Impact of Archetypal National Health Insurance Plans on U.S. Health Manpower Requirements. A report prepared by Huang, Lien-fu and Shomo, Elwood W., Robert R. Nathan Associates. DHEW Pub no. (HRA) 75-1. Rockville, Md.: U.S. Department of Health, Education, and Welfare, 1974.

Though it is limited to U.S. references, it's value lies in detailing the potential impact of various health plans on manpower. Useful methodological work is included in its evaluation

20.

A Study of Community Health Training Programs in Schools of Medicine in Four Selected Developing Countries - Colombia, Ethiopia, Thailand, Turkey. Washington, D.C.: Agency for International Development. 1974.

This study was sponsored by the Association of American Medical Colleges. The report covers physicians, health teams, and distribution issues. Findings stipulate the uniqueness of each of the four nations' efforts. The study also recommends tailored approaches to manpower issues.

21.

Badgley, R.F.; Bloom, S.; Mechanic, D.; Person, R.J.; Wolfe, S. "International Studies of Health Manpower: A Sociologic Perspective." Philadelphia: Medical Care 9 (3) May-Jun 1971, 235-252.

This article reviews problems encountered in the field of health manpower planning. It suggests a sociological framework for analysis of a nation's health manpower component.

22.

Baker, Timothy D.; Perlman, Mark. Health Manpower in a Developing Economy: Taiwan, a Case Study in Planning. Baltimore, Maryland: The Johns Hopkins Press. 1967.

Of special note in this classic study is the introduction of multivariate analysis to manpower planning. Within a Taiwanese framework, the text clearly offers methods to measure both present supply and future availability of health staff. This Johns Hopkins University study consisted of five substudies containing 60,000 interviews: an islandwide household survey, a health workers' census, a joint medical school entrance examination study, a survey of student attitudes, and a medical training institutions survey. Special chapters deal with staffing components, including environmental sanitation workers. The study primarily uses a biological demand framework. It provides state-of-the-art thinking on private and public sector demand and potential solutions. Health planners especially will find the multisort analysis and sampling design sections useful.

23.

Baker, T.D. "Health Manpower Planning." in Reinke, W.A., ed. Health Planning: Qualitative Aspects and Quantitative Techniques. Baltimore, Md.: Johns Hopkins University, 1972.

This article by one of the top experts in this field contains a great deal of insight. It suggests that advanced leadtimes make it imperative for health manpower planning to receive critical attention. The Johns Hopkins University's framework for health manpower planning is continued in this work. It includes: "(1) supply analysis (measuring current supply of all types of health workers in detail); (2) analysis of projected supply; (3) analysis of effective economic demand for services; (4) analysis of projected demand; (5) estimation of worker productivity; (6) analysis of the anticipated gap between future supply and future demand; and (7) constraints that will limit any recommendations."

24.

Baker, Timothy; Ferguson, Donald; Hall, Thomas; Haynes, Alfred; Taylor, Carl. Health Manpower Planning in Developing Nations. Washington, D.C.: Agency for International Development. 1968.

This critical classic provides detailed discussions on methods and issues in manpower planning. Key topics covered include: supply analysis and projection methods; demand analysis and estimating costs; education planning and evaluation; improvement of manpower utilization; distribution and motivation; magnitude and effects of emigration of health professionals; and organization and implementation of health manpower planning with its implications for research, demonstration, and training.

25.

Baker, Timothy D.; Perlman, Mark. Medical Manpower: A Study of Demographic and Economic Impacts. Washington, D.C.: Agency for International Development. Monograph. 1967.

This contains essentially the same information as the pioneering study in Taiwan presented by the same authors and published by the Johns Hopkins University. This monograph, however, appeared under the auspices of the Agency for International Development.

26.

Baker, T.D. Paramedical Paradoxes: Challenges and Opportunities. London: Churchill. 1971.

This book discusses the importance of the paramedical worker, as well as the paradox of the low priority given to their training, recruitment, and utilization. It advocates updating teaching needs, addressing career development issues for workers, and teaching supervisory techniques.

27.

Battersby, Anthony; Gitsels, Will; Mustafa, Naka; Bu-Ali, Abdul Rahman; Hanachi, Javad. Health Services Development Seminar, Cure and Care in a Managerial System.

Washington, D.C.: Agency for International Development. April, 1974.

The proceedings of this seminar endeavor to quantify and measure the elements of a health "system". The results discuss the value of auxiliaries, the application of operations research and cybernetics in health, and the importance of comprehensive participation.

28.

Beck, Ann. A History of the British Medical Administration of East Africa, 1900-1950. Cambridge, Massachuestts: Harvard University Press. 1970.

This history provides significant insight into the manpower aspects of a colonial medical administration. It highlights the often changing and usually conflicting goals of government officials and mission personnel. The author's comments on medical services in developing nations are germane to this study.

29.

Bell, John E. "The Family in Hospitals in Developing Countries." Neurologia, Neurocirugia, Psiquiatria, 1973, 14(2-3),69-78.

This article by a director of a U.S. mental health research institute is an important contribution to the manpower literature. It describes the author's experiences at hospitals in Asia and Africa. While it focuses on ways in which institutions involve willing family members in patient treatment, advantages and disadvantages of the approach are noted.

30.

Bennett, F.J. "Medical Manpower for Occupational Health in the Tropics - Professional Staff: Needs and Training." London: Journal of Tropical Medicine and Hygiene. 73. Dec.1970. 324-335.

This article analyzes statistics of medical manpower in East Africa and Nigeria. It shows that it will be difficult to reduce the physician/population ratio below 1:10,000 before the year 2000. There is therefore a need for rapid expansion of auxiliary training, and the establishment of a network containing rural health posts and centers. It lists curriculum needs and profices references.

31.

Benjamin, Bernard. "Health manpower and hospital utilization." WHO Chronicle, 25, 541-6 1971.

This article provides useful World Health Organization documentation on the interface between the use of hospitals and health care manpower. It also provides suggestions for improved utilization.

32.

Benyoussef, Amor; Wessen, Albert F. "Utilization of Health Services in Developing Countries -- Tunisia." Social Science & Medicine, 1974, 8(5), May,287-304.

This article studies seven areas which are typical of different types of facilities and manpower structures. It shows that ambulatory care services are used more by urban than by rural populations. A framework for further study is developed on the basis of modernization, which is presented as a key predictor for use of health services in developing countries.

33.

Bergwall, David F.; Reeves, Philip N; and Woodside, Nina B. Introduction to Health Planning. Washington, D.C.: Information Resources Press, 1974.

This introduction includes brief discussions of manpower issues relative to the supply and demand of physicians, nurses, and paraprofessionals. It is a basic introductory text, yet it covers a wide range of issues.

34.

Berkowitz, Monroe, et.al. Medical Care Prices and Health Manpower in New Jersey: An Exploratory Study. A study prepared for the New Jersey Comprehensive Health Planning Agency. New Brunswick, N.J.: Rutgers University, 1970.

This study correlates the health care pricing structures to manpower. Methodological issues also contribute to this effort.

35.

Bevan, P.G.; Manson-Bahr, P.E.; Pinkerton, J.H. "Medical Education in Burma, 1969". London: British Journal of Medical Education. 4, 1970. 67-75.

This article outlines medical education development since 1924. Other topics include: medical research, undergraduate curriculum in medicine, traditional teaching techniques postgrad training, obstetrics, and gynecology.

36.

Bezdek, Roger H. Long-Range Forecasting of Manpower Requirements: Theory and Application. IEEE Manpower Monograph. New York: Institute of Electrical and Electronics Engineers, 1974.

This monograph discusses the long-term questions of health manpower planning. It provides a useful review of techniques and thinking in the field up to 1974.

37.

Bible, Bond L. Health Care Delivery in Rural Areas. Chicago, Illinois: American Medical Association. 1972.

This pamphlet presents an overview of rural health problems. It suggests selected plans and models. Details, which are provided on the nurse practitioner, Medex, and rural health associates, may be useful to developing nations which are seeking ways to extend the services of physicians.

38.

Block, A. Harvey. A Model for Analyzing Economic Impact of Comprehensive Health Service Projects. Humanics Assoc. 1974.

This report describes a model which is especially germane to the current health manpower assessment effort. Block's model assumes an interrelationship of economic infrastructures, and the health care service delivery effort; it offers projective skills for resolution.

39.

Boohene, A.G. "Physician Assistants in a Developing Country." New York: World Medical Journal. 9(2) Mar-Apr 1972.

This article analyzes the use of PAs in Ghana. It gives detailed accounts of health center superintendents and nurse anaesthetists. This article describes how candidates are selected, trained, and placed in the rural health center.

40.

Brehman, George E., Jr. A Study of Physician Manpower Demand and Supply in Pennsylvania: Methodology and Findings. Harrisburg, Pa.: Pennsylvania Department of Education, 1973.

This study contains a review of useful methodological efforts in the U.S. It assumes a physician-dominated health care environment.

41.

Bridge, J; Bai, Sapirie,S. Health Project Management: A Manual of Procedures for Formulating & Implementing Health Projects. World Health. 1974.

This manual discusses various administrative matters relating to project management of health programs. It contributes to a basic understanding of staff training, supervision, and administration of health projects.

42.

Brooke, D.E. "Role of the Medical Assistant." London: Tropical Doctor. 3(4),Oct 1973.

This article suggests that developing countries too frequently build upon a technically advanced health service system which does not include proper services for the rural poor. It indicates that medical assistant training can not only make less expensive care possible, but also provides an ongoing backbone of health care for years to come.

43.

Browne, S.G. "Training of Medical Auxiliaries in the Former Belgian Congo." London: Lancet. 1(7812) 19 May 1973.

This article discueses admission requirements, curriculum, the use of teaching staff, examinations, and continuing activities of a training program for medical auxiliaries in Zaire.

44.

Bryant, John. Health & The Developing World. Ithaca and London: Cornell University Press. 1969.

Based on a study sponsored by the Rockefeller Foundation, the book analyzes health programs and their obstacles in developing nations. It devotes special attention to health manpower needs. It also develops the concept of a health team composed of paramedical and auxiliary people as well as professionals. The use of modern managerial methods are advocated, such as systems analysis, cost benefit concepts.

45.

Bureau of Health Resource Development. International Migration of Physicians and Nurses: An annotated Bibliography. Bethesda, Md.: HEW,PHS,HRA,Bureau of Health Resources Development. 1975.

In statistical formats this pamphlet outlines the impact of the "brain drain" relative to health professionals.

46.

Butter, Irene. "Health manpower research: A survey." Inquiry, 5.41: December 1967.

One of the most prominent professionals in the health manpower area provides a useful overview of research in the field. The survey, however, provides a largely western orientation.

47.

Butter, Irene and Feldstein, Paul J. Increasing the Supply of Physicians - Alternative Sources for a State. Health Manpower Policy Discussion Paper Series, No.A-4. Ann Arbor, Mich.: University of Michigan, School of Public Health, 1973.

This policy paper details the steps a state must take to improve its supply of physicians. The author's comments on the urban "brain drain" of physicians to the cities, as well as the resultant policy issues involved, are especially useful.

48.

Byer, M.S.; Dyer, H.; Gourlay, R.J. and Standard, K.L. "The Role of the Health Centre in an Integrated Health Programme in a Developing Country." Medical Care 4:26-29,1966.

This report discusses health center issues from the perspective of a developing nation. It contributes knowledge on the interplay of the center with its manpower components.

49.

California Medical Association. "Physician shortage - myth or reality." Socio-Economic Report, XIII(1): January 1973. San Francisco: Bureau of Research and Planning, Cal. Medical Association, 1973.

This report addresses physician shortage issues. It shows that the distribution of physicians is a more central issue to health planners than merely the issue of physician supply.

50.

California, State of; Health Manpower Council. A Task Analysis Method for Improved Manpower Utilization in the Health Sciences. California: Health Manpower Council of California, 1970.

After discussions of measurement and task analysis, this work concludes that these techniques are useful mechanisms for assessing and projecting manpower utilization. It points out that some aspects of this methodology are used in all effective manpower planning.

51.

California, State of: Health Manpower Council. Health Planning Agency. California Health Manpower: Supply and Demand. A report to the Health Manpower Committee, State Health Planning Council, Health Manpower Series, Report no. 1, California: State Health Planning Agency, 1969.

The methodological approaches presented in this report relative to determining the supply and demand for health manpower are useful to the present study. The work provides a U.S. orientation which may not be entirely applicable, however, to developing nations.

52.

Canada, Department of National Health and Welfare. Community Health Worker in Indian and Eskimo Communities. Ottawa: Dept. of National Health an- Welfare. (undated)
This pamphlet provides details on selection procedures, training programs, and relationships between community health workers and public health nurses in Indian and Eskimo community programs. It advocates in-service training in order to raise confidence in the use of such workers.

53.

Cartaya, Oscar A. "Puerto Rico: An Analysis of the Problems of Rural Center Staffing." Harvard School of Public Health, Boston, Massachusetts. Nov. 1975.

The health manpower problems encountered by Puerto Rico's regionally organized rural health care centers are examined by this report. It notes that the government has found it difficult to staff rural health care centers with physicians. Factors making rural service unattractive include: low salaries, heavy workloads, lack of opportunity to keep up with developments in the field, low status in the eyes of other physicians, and decisions made at high levels without consideration of local needs. The University of Puerto Rico, for example, graduates about 50 to 100 physicians annually, but large percentages of these graduates emigrate to the continent in order to become specialists. Since legislation requires a year of rural service for all recently graduated general practitioners, this provides additional incentives for students to specialize.

54.

Chang, W.P. Health Manpower Development in an African Country: The Case of Ethiopia. Chicago: Journal of Medical Education. 1970.

This study details a team approach to training as utilized at Haile Selassie I Public Health College and Training Center. It stresses that the curriculum should emphasize preventive medicine and public health. It suggests that a definite career structure with professional advancement should be offered. It also suggests that this model could serve other countries with appropriate modifications.

55.

Charles, Ed. "Policies to increase the supply of physicians in rural communities." Am Economist, 16, 3[illegible]-44. Fall 1972.

This conference paper, with comment by Grant Scobie, is a useful bibliography for this field. It discusses the health policies surrounding the issue of physician supply.

56.

Coleman, Sinclair. Physician distribution and rural access to medical services. Rand Corporation. 1976.

This study was prepared for the Health Resources Administration, U.S. Department of Health, Education, and Welfare. It discusses various issues related to the distribution of physicians in the context of rural access to health care.

57.

Cooke, Thomas M.; Pines, James; Rusch, William; Swanson, Donald; Fried, Chestene. Planning National Nutrition Programs: A Suggested Approach, Volume I - Summary of the Methodology. Washington, D.C.: Office of Nutrition, Bureau for Technical Assistance, Agency for International Development. 1973.

This manual describes the national nutrition system in terms of a "systems" approach. It is useful to the present effort in its positing of a health section assessment methodology. Detailed chapters deal with selecting target groups and tentative goals, types and points of intervention, and certain strategy items in planning and programming the sector assessment.

58.

Dars, Lewis. An Analysis of the Concepts of Demand and Need for Medical Care and Their Implications for Manpower Planning. Health Manpower Planning Series, Monograph 1. Trenton, N.J.: New Jersey Department of Higher Education, 1973.

This is a useful localized source document on manpower need and demand as seen from an American perspective. It provides a pertinent methodological contribution to the field.

59.

Denny, Kevin M. A Review of Alternative Approaches to Health Care Delivery in Developing Countries. Cambridge, Mass.: Management Sciences for Health. 1974.

This monograph traces some 14 new approaches to service delivery in developing nations. Those particularly noteworthy for this effort are: the post-orderlies program in New Guinea, Guatemala;s village health entrepreneurs, Pakistan's family planning auxiliaries, the barefoot doctor in China, Vietnam's village health stations, the resupply points in the Filipino barrios, and Thialand's indigenous practitioners.

60.

Department of Health and Population Dynamics, in collaboration with the Nursing Section. Nursing and Midwifery in Health and Population Dynamics. Washington,D.C.: Pan American Health Organization, Pan American Sanitary Bureau, Regional Office of the World Health Organization. 1970.

This report outlines the critical place nurses and midwives hold in family planning for developing nations. It offers a useful overview of this significant component of health manpower.

61.

Department of Health, Education, and Welfare. A Computer Simulation Model for Evaluation of the Health Care Delivery System. Washington,D.C.: Health Services and Mental Health Administration, National Center for Health Services Research and Development. 1970.

The report describes one of several extant computer models in the health manpower field. It details the characteristics of demand in terms of cultural, demographic and economic factors, as well as certain health care delivery constraints. Supply characteristics include distributional issues and efficient utilization.

62.

Detwiller, L. "Social Forces in the Demand-Supply Equation." Hosp. Prog. 56(6) 52-5. Jun 75.

This article provides a useful examination of the sociological issues bearing on health manpower supply and demand. Although it primarily offers an American orientation, it is useful as an extension for developing nations.

63.

Deuschle, Kurt W. "Training and Use of Medical Auxiliaries in a Navajo Community." Public Health Reports, 78(6). 461ff. June, 1963.

This report is a pioneering work on auxiliary utilization among the Navaho. It includes discussions of a wider applicability of those lessons learned to other cultures. The curriculum in this Cornell-Navajo project included personal health, growth and development, epidemiology, immunology, dental care, nutrition, family life, and special disease conditions, such as infant diarrhea and tuberculosis.

64.

Dowling, M.S. "Aspects of Planning, Conduct, and Evaluation of Training for Medical and other Health Staff." London: Transactions of the Royal Society of Tropical Medicine and Hygiene. 63 (2), 1969. 171-186.

This report advocates attention in developing nations to: training courses with shorter programs, teaching methodologies adapted to personnel shortages, and improved evaluation of student/teacher performance.

Eberle, B.J.; Gonzales, L; Mortimer, E.A. "A New Manpower Model of Rural Urban Linkage for Improved Health Services." New Mexico University, Albuquerque; Texas University Health Science Center at Houston,; National Center for Health Services Research, Rockville, Md. Feb. 1973.

This article analyzes in detail an experimental primary care system, which was manned by a nonphysician and established by the University of New Mexico in a rural poverty area. System development is described. Evaluation is provided in terms of community attitudes and utilization, quality of care, and financial status.

66.

Eberle, Betty J.; Gonzales, Lois; Mortimer, Edward A,Jr. "A New Manpower Model of Rural/Urban Linkage for Improved Health Services." New Mexico University, Albuquerque; National Center for Health Services Research, Rockville, Md. 1974.

This project contains essentially the same data as reported in the February 1973 article, but it provides much greater detail. It sought to improve rural health care by training a registered nurse to deliver primary care to a rural community.

67.

Eckles, J.E. and Summer, G.C. Health Manpower Requirements Analysis: A Review. A working note prepared for the Health Education Commission of the Illinois Board of Higher Education. California: Rand Corporation. 1970.

This is an informative review of fundamentals in health manpower planning (mainly U.S. applications).

68.

Ehrereich, John; Ehrenreich, Barbara. "Hospital Workers: A Case Study in the New Working Class." Monthly Review, 24 (8), 12-27, Jan.1973.

This article demonstrates the unusually high degree of functional interdependence between workers of different rank within and outside the institution. The analysis provides a useful ideology of professionalism. Third world issues are raised.

69.

Elliot, K. "Doctor Substitutes." Health and Social Service Journal. London. 7 Jul 1973.

This article discusses the redistribution of medical manpower and gives recommendations for the provision of substitutes for physicians, such as barefoot doctors. It states, for example, that seven such auxiliary health workers can be trained for the same amount of money as one medical doctor.

70.

Emery, R.; Frerichs, R.; Severn, B. "Project Manual for Information and Evaluation"- Rural Health Services Project. Montero, Bolivia. August 1976.

Useful health sector documentation for Bolivia with methodologies applicable elsewhere are contained in this manual. It covers monitoring processes, criteria selection and evaluation, planning, project operations, and descriptions of specific pilot studies in health services assessment.

71.

Erbstoeszer, Marie. Health sciences -- organizational and administrative techniques: a selected annotated bibliography. Council of planning librarians. 1974.

This is a thirty page mimeographed bibliography. It has annotations useful for the understanding of organizational issues appropriate to the health sciences.

72.

Evaluation of Medical Care Provided to Alaskan Natives. Anchorage, Alaska: Alaska Native Health Board. 1977.

With special emphasis on Alaskan natives, this evaluation discusses several aspects of health care in terms of comparative data from Indian Health Service areas and private practice groups in the southwestern U.S. and Alaska. It relates health manpower issues to geographic distribution problems.

73.

Factors Influencing Practice Location of Professional Health Manpower: A Review of Literature. DHEW pub. no. (HRA) 75-3. Rockville, Md.: U.S. Dept. of Health, Education and Welfare, 1974.

This government document is useful for detailing issues of manpower distribution. Specifically useful for the United States, such issues have applicability elsewhere.

74.

Fein, Rashi. Brooking Research Report #64, Medical Manpower for the 1970's. Washington, D.C.: The Brookings Institution. 1967.

This report is adapted from Dr. Fein's book, The Doctor Shortage: An Economic Diagnosis. The discussions of the future demand for physicians' services, the supply of doctors, along with productivity and organization of the "brain drain" are particularly useful.

75.

Fein, Rashi. The Doctor Shortage: An Economic Diagnosis. Studies in Social Economics. Washington, D.C.: The Brookings Institution. 1967.

These studies analyse the "brain drain in terms of its economic impact on medical manpower.

76.

Feldstein, Paul J. The Demand for Medical Care. General Report. Vol.1. Chicago: American Medical Association, 1964.

Although somewhat dated, this report still offers an examination of many issues relevant to health manpower demand during the 1970's.

77.

Fendall, N.R.E. Auxiliaries in Health Care - Programs in Developing Countries. Baltimore and London: The Johns Hopkins Press. 1972.

This book provides a comprehensive review of the use and training of health auxiliaries in developing countries.

78.

Fendall, N.R. "Auxiliary Health Personnel: Training and Use." Washington,D.C.: Public Health Reports. 82 (6) June 1976. 471-479.

This article reviews the main types of auxiliaries (single, multi, and all purpose). It includes advice on the selection and training of such auxiliaries as part of a balanced program of comprehensive medicine.

79.

Fendall, N.R. "Dental Manpower Requirements in Emerging Countries." Washington,D.C.: Public Health Reports. 83 (9),Sep 1968. 777-786.

This report indicates that statistically valid dental health surveys do not exist in many developing nations. Scattered evidence from those that do exist show widespread caries, peridontal infections, and malocclusion. The ratio of dentists to population varies from 1:15,000 in Jamaica to 1:250,000 in Kenya. Only 130-150 dentists are graduated annually from Africa's seven dental schools. Half the countries of the world do not have a dental schol, and there are no prospects for attaining one. It proposes the use of dental auxiliaries in a program of three overlapping but consecutive phases. It also details the organization of dental health care in a pioneering and specific way.

80.

Fendall, N.R. "Medical Assistant in Africa." London: Journal of Tropical Medicine and Hygiene. 71, April 1968. 83-95.

This is a localized discussion of the medical auxiliary issue in Africa. It suggests that the prevention, recognition and diagnosis of most illnesses found in these countries could be taken over by trained assistants. Case studies are given from Sudan, Uganda, Kenya, Tanzania, and Malawi.

81.

Fendall, N.R.E. "The Auxiliary in Medicine." Israel Journal of Medical Sciences. 4(3):614-628. May-June 1968.

One of the strong and early advocates of the use of auxiliaries as physician extenders and system expanders argues that "if we are to make any impact on world disease and ill health, it is essential to achieve a total outreach, within the limits placed on us by severely restricted economic and educational resources." The article discusses the auxiliary's ability to provide this type of total outreach.

82.

Fendall, N.R. "Utilization and Training of Auxiliary Health Personnel for Developing Areas." Boston: Industry and Tropical Health. 6, 1967. 153-162.

The article describes examples of utilizing and training auxiliary health personnel from Thiland, Ghana, East Africa, and Fiji. It suggests that less trained individuals can perform many of the jobs needed in an efficient health care system, if medical care can be broken down into component parts.

83.

Feuerstein, M.T. "A Comprehensive Community Approach to Rural Health Problems in Developing Countries." International Nurses Review, 23 (61). 174-82. Nov-Dec.76.

The author, one of the leading advocates of the "comprehensive community approach", details rural applications of the methodology for developing nations. The methodology stresses the role and appropriate utilization of auxiliary personnel.

84.

Feuerstein, M.T. "Rural health problems in developing countries: the need for a comprehensive community approach." Community Development Journal, 11 (1) 38-52.1976.

This article emphasizes the use of existing community resources, auxiliary personnel, and appropriate technology in raising health standards for rural areas.

85.

First Pan American Conference on Health Manpower Planning. A conference sponsored jointly by the Pan American Health Organization and the Government of Canada, Ottawa, 10-14 September, 1973. Washington, D.C.: World Health Organization, 1974.

The manual offers a collection of pertinent papers drawn from the PAHO conference on manpower planning conducted in Sept. 1973.

86.

Flahault, D. "Training of Front Line Health Personnel: A Crucial Factor in Development." Geneva: WHO Chronicle. 27 (6), Jun 1973. 236-241.

Some basic solutions to determining the type of personnel needed, the establishment of adequate training programs, and use of health personnel are offered in this article.

87.

Foster, George M. Problems In Intercultural Health Programs. Berkeley, California: University of California. 1958.

This pamphlet was prepared for the Social Science Research Council and traces the socio-cultural aspects of health manpower. It provides suggestions for research issues. It also deals with the role of the social scientist in intercultural programs.

88.

Fountain, D.E. Primary Health Professionals in Developing Countries. n.p.1972.

This book discusses prejudices held against health care "nonprofessionals". It advocates creation of functional titles that describe personnel roles. It suggests the titles of"primary health professional" for those who see a patient first, and "secondary health professional" for those who provide specialized treatment.

89.

Frei, E. "The Political Realities of Health in a Developing Nation." Bulletin N.Y. Acad. Med. 51(5),580-90. May 75.

This article traces issues that hinder health manpower decision making in developing nations. It suggests that only within the context of overall economic development will the political realities of such planning be fully understood.

90.

Fulop,T.; Guilbert, J.; Dowling, M.; Etienne, G.; Burton, J.; Mejia, A.; Turnbull, L.; Bannerman, R.H.O.; Flahault, D. "Manpower for National Health: Need, Planning, Implementation." Impact of Science on Society. 1975, 25(3), Jul-Sep.,213-224.

This is a collection of pertinent articles on manpower issues related to the health services of developing nations. A Mejia's article is especially useful for defining health manpower planning as a managerial technique. The author, for example, describes alternative methods for projecting requirements indlucing economic, biologic, normative, and worker/population ratio methods.

91.

Functional Analysis of Health Needs and Services. Baltimore, Maryland: The Johns Hopkins University. 1970.

Methodologically useful for the present work, this report contains results of a two-year study (primarily in India) designed to measure community health needs. It identifies ways in which effective demand is currently being met. It also develops methods to measure the quantity and quality of health resources.

92.

Galiher, C. "Rural Initiatives and Health Education Needs." Health Education Monograph 3(1), 109-14. Spring 75.

This article provides a brief discussion on the question of health needs within the context of rural needs projection. It provides a useful example of client generated manpower need analysis.

93.

Garcia, Ramiro Delgado. Feasibility Study - For Development, Implementation and Testing of a Comprehensive Family Planning Delivery System Within A Maternal and Child Health Program. New Orleans, Louisiana: Family Health Incorporated. 1971.

This study was conducted in Colombia with the support of AID funds. It offers a brief review of governmental health and manpower policies. Candelaria's "simplified system for health services" is offered as a model of intervention.

94.

Gerlach, Carl H. Quantifying Health Resources - Making Numbers More Meaningful. San Francisco: Bay Area Comprehensive Health Planning Council. 1977.

This book provides a statistically successful paradigm of a way to quantify health resources, including manpower components. The paradigm includes aspects of policy controls, community descriptors, health status descriptors, care decisions, access process, demand or use, medical service production (output), provider finance, community finance, health resources, reimbursement and information services.

95.

Gish, Oscar. Doctor Migration and World Health: The Impact of the International Demand for Doctors on Health Services in Developing Countries. London: G. Bell & Sons. 1971

This is perhaps the most comprehensive work available on the so-called "brain drain." The author is one of the foremost experts in health manpower analysis. It provides background on the international medical migration, emigration of British doctors, immigration of foreign doctors and recommentations (in Part 1). Part 2 offers discussions of health care planning in developing nations with a country-by-country analysis of: the Indian subcontinent (India, Pakistan, Ceylon); other Asian Commonwealth countries (Malaysia, Singapore, Hong Kong); non-Commonwealth Asia (Philippines, Thailand, Indonesia); Middle East (Iran); Africa (Ethiopia, Sudan, Kenya, Ghana); and the West Indies (Trinidad). The author's comments on values, education, manpower, rural-urban dichotomy, and medical economics are some of the most useful portrayals of developing nation reality to be found anywhere in the literature.

96.

Gish, Oscar. Guidelines for Health Planners: The Planning and Management of Health Services in Developing Countries. London: Tri-Med Books, Ltd. 1977.

This is a practical "how-to" text for those responsible for the development of health priorities and plans in developing nations. It was developed by a reknowned health economist who has extensive overseas experience in developing countries.

97.

Gish, Oscar; Walker, Godfrey. Mobile Health Services. London: Tri-Med Ltd. 1977.

This pioneering work, resulting from an extensive project funded by the United Kingdom Ministry of Overseas Development, assesses the relative value of mobile services. It provides recommendations regarding the potential use of various modes of transportation. Field work was conducted in Botswana.

98.

Gish, Oscar. Planning the Health Sector: The Tanzanian Experience. New York: Holmes & Meier Publishers, Inc. 1975.

Under one cover, Gish provides detailed discussions of financing, staffing, facilities, village and mobile services, preventive services, maternal and child health, pharmaceuticals, non-governmental services, and external aid. The staffing text provides essential documentation on employment distribution, age structuring, intake, wastage (resignations, retirements, deaths), demand and supply.

99.

Glaser, William A; Habers, G. Christopher. The Migration and Return of Professionals. New York: The United Nations Institute for Training and Research. 1973.

This is an in-depth United Nations work on the "brain drain" issue which discusses overall migration patterns. It analyzes decisions to study abroad, migration decisions after completing a course of study, factors influencing long-term career decisions, together with predications on future migration and return.

100.

Goldfarb, Marsha Geier. A Critique of the Health Manpower Planning Literature. Working Paper Series no. 73-2. New Haven, Conn.: Office of Regional Activities and Continuing Education, Yale University, School of Medicine, 1973.

This critique provides a useful overview of the field of manpower planning. It establishes certain criteria for use in assessing the literature currently available in this field.

101.

Goldstein, Harold M. Methods of Projecting Supply and Demand in High Level Occupations. A paper delivered at the annual convention of the American Statistical Association, Philadelphia, Pa., Sept. 8, 1965. Washington, D.C.: American Statistical Association, 1965.

Dr. Goldstein provides a methodology for the analyses of supply and demand projections.

102.

Goldstein, Harold M. and Horowitz, Morris A. Health Manpower - Shortage or Surplus. A paper delivered before the Association of Schools of Allied Health Professions, Nov.20, 1973. Boston, Mass.: Department of Economics, Northeastern University,1973.

The authors address the question of health manpower supply. While the issue if rife with conflicting facets, they conclude that the questions of need, demand, and distribution largely determine whether one considers a given situation as shortage or surplus.

103.

Guilbert, J.J. "Teacher Training for Medical Schools in Africa". Lancet, 2(7880), 570-3. 7 Sep 74.

This article provides a detailed account of the status of medical school faculty training in Africa during the recent past. It concludes that issues of comparability and standards are always prevalent when considering the question of supply and demand.

104.

Haavio-Mannila, Elina. Approaches to Corrrect the Under Representation of Women in the Health Professions: The Scandinavian Experience. Rockvile, Maryland: Health Resources Administration. 1975.

This paper was presented at the International Conference on Women in Health, 1975, by a distinguished professor of sociology. University of Helsinki, Finland.

105.

Hall, Thomas L. Health Manpower in Peru. Baltimore, Md.: The Johns Hopkins University Press. 1969.

This is one of the classics in the field with respect to supply and demand analyses. It starts out with a review of several demand approaches (biologic, effective and empirical) proposing the concept of "rationalized" demand. The author then proposes simplified methods for health sector cost estimation. Hall's supply analyzes the progress by personnel category (physicians, dentists, pharmacists, nurses, and midwives) as well as other broader topics. A major contribution is his procedure for estimating manpower losses in the absence of precise data, his methods of projection of incoming health professionals, and his income and volume estimation approaches. Part III discusses methods for bringing supply and demand into balance.

106.

Hall, Thomas L. and Mejia, Alphonso. Health Manpower Planning in the Developing Nations. Geneva: World Health Organization. Scheduled for publication January 1978.

According to conversations with Dr. Hall, this document was scheduled for release as shown and insluces articles from approximately 12 health professionals on manpower planning in the developing nations. It should quickly become a major reference document in the field. It is understood that it is topical in nature and not country-specific.

107.

Hall, Thomas L. "Planning for Health in Peru -- New Approaches to an Old Problem". Am. Journal Public Health. 56(8) 1296-1307. 1966.

This article provides an abbreviated description of the Latin American Planning Method and its application in Peru. It is essentially a modification of the biologic demand method. The Latin American method offers two broad categories: (1) all diseases for which curative and prevention techniques exist, and (2) all other diseases. Morbidity and mortality are detailed for the first category; empirical assessments of demand are given for the second category.

108.

Hassouna, W.A. Integrated Services: An Instrument of Health Policy Aimed at Forming the New Egyptian. Cairo: Arab Council of Egypt. 1973.

This book discusses the Egyptian attempt to bring health services to all citizens as expressed in the Charter and reaffirmed by President Anwar El-Sadat in 1971. It maintains the "right of all citizens to health care". It holds that health care is "a guaranteed right not tied to any material price... this care must be available to all citizens, in all parts of the country."

109.

Hausmann, R.K. Dieter; Hegyvary, Sue; and Newman, John. Monitoring Quality of Nursing Care, Part II: Study of Correlates. Bethesda, Md: DHEW, PHS, Bureau of Health Manpower. 1975.

This is a useful and innovative study that attempted to assess the quality of nursing care through the application of multivariate analyses and related methodologies.

110.

Hayes, Samuel P.,Jr. Measuring the Results of Development Projects. New York: UNESCO. 1959.

This book provides a four-step methodology for developmental evaluations. It advocates that the researcher (1) describe the project and specify its goals, (2) decide what data to use to indicate project results, (3) collect the data before, during, and after (4) analyze and interpret findings.

111.

Heald, K.A.; Cooper, J.K. An Annotated Bibliography on Rural Medical Care. Santa Monica, Calif: Rand Corporation. 1972.

This bibliography lists all references since 1960 concerned with rural health problems in America. It was prepared for the Division of Health Evaluation, Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health, Education and Welfare.

112.

"Health Care for rural communities". Geneva, Switzerland. WHO Chronicle, 29(7) 257-263. 1975.

This article stresses the lack of financial support and investment in training of health workers as a major obstacle to providing adequate rural health care in developing nations.

113.

Health Conditions in the Americas, 1969-1972. Washington, D.C.: Pan American Health Organization. 1974.

This compilation of health statistics includes data on population, births, life expectancy, deaths, child mortality, communicable diseases, services (including expenditures), manpower (including all levels of education and training). The statistics were gathered from replies by member governments to questionnaires sent out annually by the Pan American Health Organization.

114.

Health in Africa. Washington, D.C.: Office of Development Services, Bureau for Africa, Agency for International Development. 1975.

This book discusses health as a problem from the perspective of quality of life, equity, and economic development. Intervention and the health impacts are highlighted. An evaluation of alternative intervention approaches is also given. Employment of health manpower and its interplay with overall socio-economic development and income distribution is discussed.

115.

Health Manpower and Health Services in the Syrian Arab Republic. Washington, D.C.: Family Health Care, Inc. 1976.

This AID supported study is probably the most definitive health manpower analysis in the Syrian Arab Republic. It looks at the nation from a socio-economic and demographic context and provides its conclusions within the traditional framework of the services delivery capacity, preventable morbidity, and mortality.

116.

Health Manpower Planning Process. Rockville, Md.: U.S. Department of Health, Education, and Welfare, Public Health Service, National Health Planning Information Center. 1976.

This is Volume I in the Health Planning Methods and Technology Series. This series includes two other volumes found in this bibliography under Kriesberg, Marriet M., et.al. This monograph provides the conceptual framework for the series and presents the health manpower planning process in a systems perspective. Key topical areas include: definitions, components, step-by-step plan development, resources, strategies, and cautions. Perhaps the best source document in the field which deals with these basic issues, it is a good place to start for those beginning to understand the field.

117.

Health Manpower Source Book. Section 2: Nursing Personnel (revised 1969); Section 20: Manpower Supply and Educational Statistics for Selected Health Occupations. Washington, D.C.: U.S.Government Printing Office. 1969.

This information is useful for deriving statistical formulations of health manpower data. It may also be of use fo Ministries of Health in developing countries for demonstrating information collation techniques.

118.

Health Sector Assessments. USAID Mission to El Salvador, San Salvador, El Salvador, November 1976.

This book provides detailed assessment of the health sector. The human resource

section is largely the work of Dr. L.F. Krystynak, senior health manpower analyst at the White House. It concludes that health resource utilization is inefficient due to the short supply of intermediate level personnel and concentration of staff in urban areas. Manpower/population ratios per 10,000 were found to be: physicians 4:35; dentists 1:83; graduate nurses 1:10; auxiliary nurses 2:56.

119.

Heller, Peter S. An Analysis of the structure, equity and effectiveness of public sector health systems in developing countries: the case of Tunisia 1960-1972. Ann Arbor, Michigan: University of Michigan. 1975.

The report, utilizing the Tunisian case study, provides detailed discussion of the ability of health services financed by the public to deliver timely, effective health care. Heller's approach is especially interesting due to its structural approach and consideration of equity questions.

120.

Helmick, Edward F.; McClure, William Thomas; Nutting, Paul A. Evaluation of Medical Care Provided to Alaska Natives. Tucson, Arizona: Office of Research and Development, Indian Health Service. 1977.

This summary report, prepared by Dr. Nutting (Medical Care Research Officer, Indian Health Service, Tucson, Arizona) for the Alaska Native Health Board, provides data on specific protocols, and the development of standards and indicators for the audit of medical care in non-urban situations.

121.

Hershey, John C.; Luft, Harold S.; Gianaris, Joan M. "Making Sense Out of Utilization Data". Stanford Univ., Calif., National Center for Health Services Research and Development, Rockville, Md. Medical Care 13(10), 838-854, Oct 1975.

This article examines ambiguities in health care utilization studies with regard to appropriate measures of utilization and relationships among such measures. It provides empirical tests of different utilization models. Findings show that omission of certain variables, such as health status or 'need' can result in incorrect interpretation of results.

122.

Hill, K.R. "Intermediate Technology in Medicine." In Gish, Oscar, ed. Health Man-Power and the Medical Auxiliary. London: Intermediate Technology Development Group. 1971.

This article suggests that education for physicians in developing countries should be innovative and not duplicative of western models. Training should be within a context of local issues and problems. The author argues in favor of a well trained and disciplined corps of intermediary personnel available to assist physicians.

123.

Historical Survey of United States Technical Assistance to Nursing, Part III: Latin America 1942-1966. Washington, D.C.: Agency for International Development. 1967.

This report provides an orderly country-by-country record of US AID contributions to nursing development, as well as a review of recent changes. It is a useful reference for investigating nursing status in developing countries.

124.

Historical Survey of United States Technical Assistance to Nursing, Part IV: Near East and South Asia 1947-1966. Washington,D.C.: Agency for International Development. 1967.

This report provides an orderly historical country-by-country record of U.S. AID contributions to nursing development and a review of recent changes. It is a useful reference for investigating nursing status in developing countries.

125.

Howard University College of Medicine. Health Problems of Black Population: an international conference on health manpower development and the role of the university. Washington,D.C.: Howard University Press. 1975.

This report contains a significant four-day conference on health manpower issues relating to the Black population. Speakers included Dr. Charles Williams (Deputy Director, PAHO), Dr. Sam Adams (Chief, African Bureau, USAID), Dr. Hamad ElNeil (WHO/AFRO), and distinguished ministry of health personnel from around the world. Papers on health manpower resources and utilization, health auxiliaries, field training, and team approaches are particularly germane.

126.

Illich, Ivan. Medical Nemesis: The Expropriation of Health. New York: Random House, Pantheon Books. 1976.

This book focuses on the growth of iatrogenesis (illness caused by physicians and other medical personnel) from clinical and social perspectives. Illich's well documents and forceful arguments on the growth of Western dependence upon a medical establishment who's cures are dubious at best, spurious at worst, is a pioneering effort and should be required reading for everyone in the field.

127.

International Seminar on "Delivering Innovative Health Services in Latin America". Volume I - Generic Model for a Health/Family Planning Service Delivery System. New Orleans, Louisiana: Tulane University. 1973.

The seminar report suggests the need for a generic model delivery system for health services which can be adapted to a variety of country-specific conditions and

implemented as a testable demonstration program. It concentrates on Brazil, Colombia, and Mexico. Chapter 2.3 offers supportive component discussions and details manpower requirements.

128.

Isaacs, Gertrude. Primex-Family Nurse Training Program in Rural Areas. Hyattsville, Maryland: National Center for Health Services Research. May 1977.

This book provides a model for a decentralized system of health care delivery where clinics provide primary care. These are staffed by nurses who provide 95% of the services demanded by the population. It offers a history of the development of primary care service in rural areas, a curriculum for primary care nurses, and issues in quality of care, productivity and costs.

129.

Jazairi, N.T. Approaches to the Development of Health Indicators. Paris: Organisation for Economic Co-Operation and Development. 1976.

This report discusses manpower issues from the perspective of the development of health indicators in the following areas: length of life, healthfulness, quality of health care, delivery of health care, and integration of the disabled into society.

130.

Kauffman, George.; Hudson, James I. "Development of an Indian Operated Health System through the Process of Interim Management by a Non-Local Organization". Project Hope. Washington, D.C. 1974, 39.

This article describes the operation of a local health system on the Navajo Indian reservation in Arizona. Generalizations are offered from the project's successful experience as a prototype health care program consistent with Indian self determination.

131.

Kavar Village Health Worker Project. Ottawa: International Development Research Centre. 1976.

Developed by the Department of Community Medicine, Pahlavi University, School of Medicine, Shiraz, Iran. A pioneering study which traces the training, fieldwork, selection, deployment, supervision, fee collection, and continuing education of village health workers (VHWs). Of especial use for this study is Part Two: Evaluation Procedure, which details methods of data collection, analysis and feedback, and presents its findings and policy implications in straightforward objectives-oriented language. This effort represents a significant third world effort in the health manpower field.

132.

Kim, Soon il: Sich, Dorothea; Kim, Han Joong; Kim, Young Key; Kim, Moon Shik. Development and Organization of Myun Level Health Care Services in Korea. Yonsei, Korea: Yonsei University College of Medicine. 1977.

Discusses the myun (township) level organization of health services and provides significant insight into the principles for selecting health personnel, types and roles of personnel, detailed service contents by program function, and job description for health care personnel. Chapter 8 attempts to calculate the number of health personnel required for the myun health subcenter by year and is a representative sample of a developing nation's analysis of manpower supply issues. Though country-specific to Korea, this study should rank as one of the more important other than Western manpower sources.

133.

King, Maurice. The Development of Health Services in Malawi 1970-1985. Washington, D.C.: Agency for International Development. 1970.

This country-specific analysis gives significant insight into staff costs in the conversion of medical assistants to clinical officers, training of the whole spectrum of medical personnel, retraining, and the World Health Organization health centre concept.

134.

King, Maurice. Medical Care in Developing Countries. Nairobi: Oxford University Press. 1966.

Subtitled "A Primer on the Medicine of Poverty" and based upon a WHO/UNICEF conference, this report is the most useful reference in the field. Its scope covers not only the organization, staffing, and implementation of health services in developing countries, but details as well treatment methodologies in almost all conceivable areas. This study includes chapters on public health, health education, the health auxiliary, health centre dynamics, etc. Dr. King stresses a cross-cultural approach to health manpower administration and advocates a greater role by the "highly doctore-" countries toward those with fewer professionals.

135.

Kleinbach, Grace; Rapoport, Mark; Hays, Charles. The Training of Health Manpower for the Developing World: A Policy Seminar. Cambridge, Mass.: Harvard School of Public Health. 1973.

A monograph from a Harvard policy seminar. Significant sessions include C.A. Alexander's "Indigenous medical practitioners--their present and future role in health care delivery systems of developing areas", "Integration of indigenous midwives", Navarro's "People as a health care resource, Training considerations for the integration of indigenous personnel into the health care system", Garcia's "Implications for organizational and structural policy in manpower development", and other articles dealing with the role of applied research in manpower development: issues, priorities, and relation to policy.

136.

Kohn, Robert; White, Kerr L.: ed. Health Care: An International Study. Report of the World Health Organization. Oxford University Press. 1976.

This is a report on the WHO/International collaborative study of medical care utilization of services in twelve study populations in seven countries. Foreword by Robert Bridgman.

137.

Kreisberg, Harriet M; Wu, John; Hollander, Edward D; Bow, Joan. Methodological Approaches for Determining Health Manpower, Supply and Requirements. Volume I, Analytical Perspective. Rockville, Maryland: US. Department of Health,Education, and Welfare, Public Health Service, Bureau of Health Planning and Resources Development, National Health Planning Information Center. 1976.

This is a classic work in the field. Beginning with assumptions and definitions about the concepts of manpower requirements and their determination of future ourcomes, the authors analyze the factors affecting demand and supply and their relative importance/interaction. Four major methodologies (manpower/population ratio, service targets, health needs, and effective demend) are given for estimating demand. Current supply methodologies, strengths and weaknesses are also given. This study contains discussions of the uses and limitations of statistics in the field, productivity analysis, and important contributions in the theoretical area of utilization, distribution, and innovation.

138.

Kreisberg, Harriet M.; Wu, John; Hollander, Edward D; Bow, Joan. Methodological Approaches for Determining Health Manpower Supply and Requirements. Volume II, Practical Planning Manual. Rockville, Maryland: US Department of Health, Education, and Welfare, Public Health Service, National Health Planning Information Center. 1976.

Another classic and standard reference point for health manpower planning efforts. This edition follows the authors' earlier volume (see above) and offers specific practical planning aspects of supply and demand issues. Sample tables, questionnaires, life tables, and other practical manpower planning tools are provided with detailed descriptions of their use in various methodological approaches. Although most useful in situations where data are readily accessible, the practical approaches will have great utility to planners from developing countries.

139.

Landes, Jacog H. "The Report of a Conference on Health Problems in Developing Nations." The Journal of Medical Education, 44(10):992-996.October 1969.

This article presents a summary of the fourth conference on Science in the Advancement of New States, Israel, 1967. The report concludes that because medical and other health manpower are not available in rural areas of many third world countries, the training and utilization of indigenous and auxiliary personnel must be promoted. Specific categories and activities of auxiliary personnel and the training required are specified.

140.

Laskin, Mark J. Commonwealth Caribbean Health Sector Study, Part I: The Health Sector in Perspective. The Caribbean Working Group, Division of Program Analysis, OIH,HEW, Washington,D.C. for the U.S. Agency for International Development.1977.

This publication indicates manpower/10,000 population ratio of physicians is 3.4. It examines in detail hh the countries of the commonwealth in the Caribbean with respect to health manpower and provides tables giving data for comparisons with the United States and other countries.

141.

Lee, Soong H.; Gianturco, Daniel T.; Eisdorfer, Carl. "Community Mental Health Center Accessibility: A Survey of the Rural Poor". Duke University, Durham, N.C.; School of Medicine, Washington University, Seattle. 1974.

This report provides the results of a North Carolina survey undertaken to evaluate the accessibility of a community mental health center in a rural poverty area and to identify barriers to increasing the center's accessibility to the people it is designed to serve. Findings suggest that long-term community education, indigenous workers, and backup services to local physicians would facilitate greater community services.

142.

Leyasmeyer, E. "Area Health Education Center as a Rural Health Care Provider". Hospitals - Journal of the American Hospital Association 50 (21), 107,1976.

This is a study developed by the University of Minnesota;s Center for Area Health Education in Minneapolis, which discusses the expanding role of the health center.

143.

Lobo, Lcg. "Educational Technology and Health Manpower Development in Latin America." Biosciences Communications, 1 (2), 99-110, 1975.

Educational technology is accepted in Latin America, this article states, as a systems approach to health manpower development teaching and learning. Technology, it contends, is aimed at promoting better interaction among teachers, students and materials. Critical analysis of instructional content, development of self instruction programs, design of multimedia packages, establishment of learning resource centers, evalu-tion at every step, and integration of health and educational systems are advocated. The author urges utilization of all health care facilities in some training of manpower and suggests this will improve the quality of health services rendered.

144.

Long, D.C. Rural Health Program in Guatemala. n.p. 1972. Unpublished paper presented at the Airlie House Conference of Latin American Population Officers,1972.

This paper discusses rural health programs in Guatemala in terms of health promotion, preventive and curative medicine, and family planning services. Interesting

discussions pertain to the training and deployment of supervisory teams consisting of a physician, a registered nurse, and a driver who help personnel in remote areas. Training of the rural health technician who is responsible for -are at the health posts is also described.

145.

Luft, Harold. Determinants of the Flow of Physicians to the United States. Santa Monica, California: The Rand Corporation. 1970.

This is a pioneering investigation of the so-called "brain drain" issue and its derivation. It points out that not only has the volume of foreign nedical graduates in the U.S. increased dramatically, but increasingly they are coming from underdeveloped rather than developed countries. Of the many that are included in the book, three examples follow: in 1969, 2300 FMGs were licensed to practice in the United States, compared with 7671 U.S. and Cnadian trained licensees. In 1978, 15,582 FMG interns and residents were working in U.S. hospitals out of a total of 47,494. In 1965, the value of U.S. medical assistance to all Latin America was roughly equal to the total cost of providing medical education to Latin American physicians who migrated to the U.S.

146.

Majeko-unmi, M.A. "Medical Education and the Health Services: A Critical Review of Priorities in a Developing Country." London: Lancet- 1(7429) 15 Jan 1966. 142-44.
This article discusses training as provided for in the Nigerian health services. It suggests that crash-course training of physicians has led to abuse of chemotherapeutic drugs and lowering of ethical standards. The author commends health services of "highest quality" and rejects the argument raised elsewhere that quantity is a priority in health manpower; he argues in favor of quality rather than mere quantity in providing for health services.

147.

Martin, Gladys E. New Roles for Women in Health Care Delivery: The Cameroon Experience. Rockville, Md.: Health Resources Administration. 1975.

The subject, as descri-ed in the title, was presented at the International Conference on Women in Health, 1975, by the Associate Professor in Community Medicine and Pediatrics, University of Yaounde, Cameroon, Africa.

148.

"Medical Auxiliaries." Pan American Health Organization, Washington, D.C. 1973.

This publication contains the proceedings of a June 1973 PAHO symposium. Subjects reviewed include the following topics: health team auxiliaries and utilization of auxiliaries to expand health services in rural areas.

149.

Meglen, Marie C.; Burst, Helen V. "Nurse - Midwives Make a Difference". Mississippi University Medical Center, Jackson; Public Health Service, Bethesda, Maryland, Division of Nursing. 1974.

A nurse-midwife educational program, and the addition of nurse-midwives to the health team in a Mississippi county are described in this report. In Mississippi the infant death rate per 1000 live births was 41.5 compared to 24.2 nationally. It is significant to note that from 1968 to 1971, infant mortality in the target county was reduced to 21.3 through the use of nurse-midwives working with county physicians and other health team members. During the second year of the program, the curriculum was modified by consolidating nine courses into four.

150. Morgan, Russell E.,Jr.; Baldwin, Burt R; Jezowski, Terrance; Teasdale, Cathry. The Role of National Voluntary Health Organizations in Support of National Health Objectives, Phase II Report. Washington, D.C.: United States Agency for International Development. 1974.

The authors present findings of the American Public Health Association effort for AID, and their recommendations on voluntary health organizations (VHOs). They trace VHO growth and development, functions, and outcomes. Chapter VI, Section H, presents evaluation procedures which are quite useful.

151.

Muramoto, Naboru. Healing Ourselves. New York: Avon Books. 1973.

This book provides an Oriental medicine perspective,and the author states that the basic health manpower unit is the entity which recognizes the body and universe as a whole system. He offers preventive and curative insights into health maintenance and management. As a striking contrast to Western medical thinking, this text could serve as a companion piece with answers to the questions raised by Illich's discussion of iatrogenesis in Medical Nemesis.

152.

Mushkin, Selma J., ed. Consumer Incentives for Health Care. New York: Prodist.1974.

This is a collection of readings on health care incentives. Two readings of note in the health manpower area describe (1) social-psychological factors affecting health service utilization, by John B. McKinlay and Diana B. Dutton; and (2) physicians as guiders of health service use, by Paul Gertman. Both articles suggest that improved health delivery is in no small part a factor of the consumer incentives that exist within the system and serve to induce timely and appropriate utilization of services.

153.

Napier, Ted L. "Mobile service centers: a potential mechanism for small rural community development". Community Development Soc J. 3, 56-53. Spring '72.

This is an important contribution in the area of manpower distribution and access problems. It provides for the conceptualization of mobilized service centers which are able to meet health needs of rural areas.

154.

National Center for Health Services Research and Development. A Computer Simulation Model for Evaluation of the Health Care Delivery System. Washington,D.C.: U.S. Department of Health, Education, and Welfare. 1970.

At the title implies, this work provides a systems model for health delivery system evaluation. The model is largely applicable to developed countries with compatible and easily accessed data sources. It may also be of some use as a tool for developing countries' Ministries of Health, especially in the area of system logic and flow. Implementation of the model is stipulated and a financial analysis provided as well.

155.

National New Health Practitioner Program - Profile. Washington, D.C.: Association of Physician Assistant Programs. 1976-77.

This expert provides detailed analysis of physician support programs from planning through admission to training, certification, and legal aspects. It also provides a selected bibliography of physician assistant sources.

156.

Neumann, A.K.; Bhatia, J.C.; Andrews, S.; Murphy, A.K. "Role of Indigenous Medicine Practitioner in Two Areas of India: Report of a Study". Oxford: Social Science and Medicine. 5(2) April 1971, 137-149.

This study contains reports of 72 interviews in India within the vicinity of two primary health centers. The study shows that the centers treated all types of illnesses and were well regarded by the villagers. Many providers used stethoscopes and gave injections (mostly penicillin or streptomycin).

157.

Newell, Kenneth. Health by the People. Geneva, Switzerland: World Health Organization. 1975.

This is a series of articles on health care in developing countries presented by WHO with emphasis on rural problems and solutions. Three types of systems are catalogued: National exchange programs (China, Tanzania, Cuba); extensions of existing systems (Niger, Iran, Venezuela); and local community development (India, Guatemala, Indonesia). Solutions to health care financing issues are presented in detail.

158.

O'Brien, Gordon E.; Fiedler, Fred E.; Hewett, Thomas T. The Effects of Programmed Culture Training Upon the Performance of Volunteer Medical Teams in Central America. Illinois: Illinois University, Urbana,Group Effectiveness Research Laboratory, June 69.

The report compares the performance of volunteer medical teams who received a "programmed culture assimilator" test with teams who did not. All team members were Americans working for three week periods in Honduras and Guatemala. They were assessed as to their success in conducting clinics and managing community development projects. The effect of training in local cultures was shown to be positive upon their overall productivity.

159.

Orubuloye, I.O.; Caldwell, J.C. "Impact of Public Health Services on Mortality: A Study of Mortality Differentials in a Rural Area of Nigeria." Population Studies , 29(2), 259-72, July 1975.

Mortality statistics are compared for two villages in Nigeria's western state in order to determine impact of improved medical facilities on mortality. The great difference existing between two villages in illness treatment was found to reflect the ready access of one population to modern facilities and manpower not easily available to the other. Differences found to be greatest were in the care of children. Findings lead to the conclusion that continued mortality decline is not a matter of overcoming ignorance but rather of providing a sufficient density of health services or reasonably high caliber.

160.

Paxman, John M. Expanded roles for non-physicians in fertility regulation: legal perspectives. Medford, Ma.: Fletcher school of law and diplomacy, Tufts University. 1976.

This monograph is a publication of the Law and Population program at Tufts. The monograph discusses the use of midwives, nurses, and non-physicians in various countries' health services infrastructure.

161.

Pearsall, Marion. "Consensus and Conflict in Health Care Delivery: Some Anthropological Thoughts." Anthropological Quarterly, 1973, 46 (3), Jul.,214-228.

This article derives generalizations from five papers dealing with aspects of public policy in relation to health services delivery to Canadian Indians, off-reservation U.S. Indians, illegal aliens, urban blacks in a southern city, and to ex-slaves in the post-Civil War period. Policy implications for manpower areas include: tendency for majority and minority groups to deal stereotypically with one another, ignorance of complexity on both sides of the health care relationship, disease and system orientation of scientific medicine vs. the illness orientation of folk medicine.

162.

Physician Support Personnel 1974-75. Chicago, Illinois: American Medical Association, Division of Medical Practice, Department of Health Manpower, Bethesda, Md. and U.S. Department of Health,Education, and Welfare, Public Health Service. 1975.

This report provides a comprehensive training list of programs which offer physician and support personnel training (physician's assistant, physician's associate, clinical associate, MEDEX, child health associate, community health medic, etc.) Length of training varies from 12 months to 5 years among programs. Thourh U.S. oriented, it provides models for developing countries.

163.

Pitcairn, Donald M.; Flahault, Daniel, ed. The Medical Assistant - An Intermediate Level of Health Care Personnel. Geneva: World Health Organization. 1974.

This is a useful collection of articles on medical "extenders". Edwin Rosinski's "Principal Accomplishments of Programmes" and Finninger's "Principal Obstacles and Problems" uniquely summarize this oft-discussed topic.

164.

Problem-Action Guidelines for Basic Health Care- A Tool for Extending Effective Services Through Auxiliary Health Workers. Cambridge, Mass.: Management Sciences for Health. 1974.

This practical document builds on the premise that "physician-provided health care probably is not required, and certainly is not realistically possible for health problems faced by most people, most of the time, across most of the world." This document provides flow charts (problem action guidelines) to improve services by problem classification, displays important questions and examination steps, isolates the most important action and treatments, encourages referrals, and provides a basis for supportive supervision and in-service training.

165.

Prywes, M. "Principles and Methods of Undergraduate Medical Education in Developing Countries." Jerusalem: Israel Journal of Medical Sciences. 4(3) May-June 1968, 638-655.

This article discusses applicable principles and methodologies used in developing countries for undergraduate madical education. It points out that anxieties shown in the past about international recognition and standards impede encouraging innovative clinical approaches in rendering health services in developing nations.

166.

Purcell, Elizabeth, ed. World Trends in Medical Education Faculty, Students, and Curriculum. Baltimore and London: The Johns Hopkins University Press. 1971.

This text includes reports from medical educators in Europe, U.S., Latin America, Africa, Philippines, Japan, India, and Indonesia. These investigations are foll-

owed by panel discussions on medical students, administration, residency training issues, and curriculum developments. Many authors also provide histories of how medical education has evolved in their respective countries. The authors show that in almost all cases there is a universal similarity in attitudes of students around the world. The study reveals "that medical educators are agreed on the need for increased integration of basic sciences with clinical material, training geared to integrated medical care, placing additional stress on pertinent social problems, emphasizing preventative medicine, and providing more opportunities for student research."

167.

Quinn, Joseph R., ed. Medicine and Public Health in the People's Republic of China. Washington, D.C.: U.S. Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health. 1973.

This relatively recent (1973) collection of readings on public health in China offers at least three articles of considerable insight. "The role of the family in health care" by Janet Salaff; "Health care fur rural areas" by Susan Rifkin; and "Medical personnel and their training" by Victor Sidel. Applications from these articles to other third world countries are significant in the health manpower field.

168.

Reference Material for Health Auxiliaries and Their Teachers. Geneva: World Health Organization. 1976.

This WHO monograph attempts to provide educational materials for utilization by teachers in developing countries. It provides a basis for preparing locally adapted materials and other learning information for auxiliary health workers. Over 1000 works are presented with annotations. The purpose of the bibliography is "to give a helping hand to those in developing countries who have the difficult task of producing learning materials for health auxiliaries, adapted to local conditions."

169.

Reiff, Robert; Riessman, Frank. The Indigenous Nonprofessional: A Strategy of Change in Community Action and Community Mental Health Programs. Washington, D.C.: National Institute of Labor Education 1964.

This book presents an approach which is designed to meet manpower and programmatic crises facing new health programs. It systematically analyzes the need for, and use of indigenous nonprofessionals as "bridgemen" between professional staff and community. Methodology used in training is depicted.

170.

Reinhardt, U. Health Manpower Planning in a Market Context: The Case of Physician Manpower. A paper presented to the Department of Economics, Harvard University.

This paper examines the manpower demand and supply for doctors within an economic context. It provides a useful investigation of the American experience, but has application useful to developing countries.

171.

"Retention of National Health Service Corps Physicians in Health Manpower Shortage Areas: A Survey of the Characteristics and Attitudes of NHSC Physicians and Their Spouses During Their First Tours of Duty." Family Health Care, Inc. Washington, D.C.: Bureau of Health Manpower, Bethesda, Md. 1 Feb 77.

This is a study of NHSC physicians and spouses. It is designed to assess variables associated with significant differences between those who remain to practice in the community of assignment and those who leave. Sample variables included: type of medical school training, continuing education, preceptorship experience, perceived potential of practice income, availability of leisure time, and demands of practice.

172.

Riess, John; Lawrence, David. "Utilization of New Health Practitioners in Remote Practice Settings." Washington University, Seattle, School of Public Health and Community Medicine; Health Resources administration, Rockville, Md. 9 Feb 76.

This report contains twelve studies of new health practitioners located in remote sites. Mechanisms for physician backup are provided and detailed for adoption so as to insure successful applications.

173.

Roemer, M.I. "Organizational Issues Relating to Medical Priorities in Latin America." Social Science & Medicine. 1975, 9(2) Feb., 93-96.

The influence of social forces on the patterns of organization of health services in Latin America is investigated. The article indicates that traditional healers are still the most important for rural areas. It is useful in detailing the policy environment within which manpower decisions in the health field are made in Latin America.

174.

Ronaghy, H.A.; Mousseau-Gershman, Y.; Dorozynski, Alaxandre. Village Health Workers. Shiraz, Iran: International Development Research Centre. 1976.

These are workshop proceedings which were held in Iran during 1976. They offer case studies of health manpower issues from Iran, Nepal, the Philippines, Thailand, and Papua, New Guinea. The training and use of village health workers is emphasized.

175.

Rosinski, Edwin F.; Spencer, Frederick J. The Assistant Medical Officer - The Training of the Medical Auxiliary in Developing Countries. Chapel Hill: University of North Carolina Press, 1965.

The study is derived from medical school, health center, and hospital visits to Africa and the South Pacific. The analysis is based on direct observation of classroom and clinic, use of textbooks, syllabi, testing, and on direct examination of regulations. This is an important and pioneering study in the field pertaining to the use of the non-professional.

176.

Russell, Christopher H. Auxiliary Personnel in Health Delivery Systems. Washington, D.C.: U.S. Department of State. 1976.

This report provides useful summary of the auxiliary personnel issue. It discusses various perceptions of the problem including the colonial era, post independence, and present day issues. Approaches to solving the problem (need for greater medical outreach) are provided from the U.S. (Medex and Indian Health Service), Cuba, China (Red medical workers, worker doctors, barefoot doctors), Papua, New Guinea, Iran, and Thailand. A selective bibliography is provided.

177.

Sadler, Alfred M.; Sadler, Blair L.; Bliss, Ann A. The Physician's Assistant-Today and Tomorrow. Cambridge, Mass.: Ballinger Publishing Co. 1976.

This book provides a pioneering and comprehensive look at the status of the physician's assistants (PA) and their role in the delivery of medical services. It concludes that the issue is rife with legal and vested interest problems, but its mandate is clear.

178.

Schaefer, M. "Demand Versus Need for Medical Services in a General Cost-Benefit Setting". Am. J. Public Health, 65 (3), 293-5. May, 1975.

The article offers a useful discussion by one of the leading experts in environmental health program administration. This paper analyzes manpower and health demand and supply from basic cost-benefit vantage point.

179.

Schulberg, Herbert C.; Sheldon, Alan; Baker, Frank, ed. Program Evaluation in the Health Fields. New York, N.Y.: Behavioral Publications. 1969.

This book contains 35 articles in the area of health program evaluation. Five sections deal with concepts and general issues, research designs, evaluation indices, program evaluation examples, and the implementation of research findings. Several sections are germane to the present study including: Donabedian's "Evaluat-

ing the quality of medical care", Deniston's "Evaluation of program effectiveness". This document is especially useful for the present work.

180.

Schwartz, William B. "Some Radical New Approaches to Dealing with the Physician Shortage." Rand Corporation, Santa Monica, Calif. 1971.

This article suggests that current strategies for dealing with the medical manpower problem will not alleviate the impediments that hamper the delivery of good quality medical care to more people. It indicates that doing more of what has been done in the past (namely producing more medical students) will not necessarily provide the needed health services. It advocates major changes in the health system in order to utilize effectively new technology and redefine the physician's role in the delivery system.

181.

Sein, M.M. "Training of Workers in Disciplines Ancillary to Medicine and Their Contribution to Surgery in Burma." Edinburgh: Journal of the Royal College of Surgeons of Edinburgh. 16(1), Jan 1971, 187-192.

This article analyzes training programs in Burma at several locations for the approximately 1300 health assistants in that country (1971). It discusses the program of health centers begun in 1951 and describes their present use as outlying stations for the trained auxiliaries.

182.

Sene, Barbara. "Mental Health Assistant Feasibility Study". South Central Montana Regional Mental Health Center, Billings, Montana; Montana State Dept. of Health and Environmental Sciences; and the Montana State Dept. of Mental Hygiene, Helena. Comprehensive Health Planning State Advisory Council, Helena, Mont. 29 Dec 71.

This publication was prepared from a feasibility study of recruiting, training, employing, and utilizing mental health assistants to help alleviate the need for mental health services in south central Montana. Results are analyzed with respect to recruitment potential, training, employment, and utilization.

183.

Seventeenth Report of the WHO Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel. Training of Medical Assistants and Similar Personnel. Geneva: World Health Organization. 1968.

This report provides useful and practical information on the training of medical assistants including recruitment, selection, training objectives, program content, teaching methodologies, trainee evaluation, and staffing.

184.

Sherman, Allan Kimbrough. "Effects of the Configuration of Rural Health Care Systems on Elective Utilization." Southern Illinois University at Carbondale,1973.

This article explores utilization proportions as a measure of the effectiveness of rural health systems in Illinois. Investigation is undertaken to support the concept that the proportion of the population who obtain appropriate care for health problems is a viable measure of effectiveness of the system. Independent variables included: occupation, location, income, age, mobility, education, financial aid, availability of professionals and facilities, distance to health service, and the resultant extent of the health system's accessibility. Findings link health care behavior to predisposing conditions.

185.

Sigel, Lois. Non-Physician personnel in expanded primary care roles: an annotated bibliography. Council planning librarians. 1976.

This is a useful collection of sources on auxiliary personnel, physician's assistants, and other nonphysician personnel.

186.

Sloan, Frank A. The Geographic Distribution of Nurses and Public Policy. Bethesda, Md.:DHEW, PHS, Bureau of Health Manpower. 1975.

Though Country-specific to the United States, the pamphlet provides important methodological information for health manpower planning aspects of distribution.

187.

Smith, Donald C. Cross-National Study of Health Care Delivery Systems: Finland, Israel, Poland, Sweden, The United Kingdom, Yugoslavia. Washington, D.C.: Dept. of Health, Education, and Welfare. 1972.

This study is designed to identify characteristics, techniques, and trends in the selected nations which have been developed as a means of extending and improving the delivery of health care.

188.

Smith, Karl A. "Health Priorities in the Poorer Countries." Kingston, Jamaica: University of the West Indies. Social Science & Medicine. 9(3) 121-132.March 1975.

The article reviews data collected from health agencies in several Asian, African, and Caribbean nations. It examines health priorities in a context of needs, demands, and perceptions of those who deliver and benefit from health service delivery. It indicates that the health priorities of these countries are (1) building the health infrastructure (2) providing basic services to a greater number and wider cross-section of people (3) training in all categories,(4) preventing and controlling communicable diseases, and (5) environmental control.

189.

Smith, R.A.; Onuaguluchi, G.O.; Pratt, K.A.; Ojo, O.A.; Bankole, M.A.; Manuawa, S. "Manpower Planning." In Akinkugbe, O.O., et.al., eds. Priorities in National Health Planning: Proceedings of an International Symposium. Ibadan: Caxton Press. 1973.

This chapter covers six papers on health manpower planning. It explains the MEDEX system in the U.S. and its applicability to developing countries. It proposes a university training program for medical assistants, advocates nursing representation at all levels of health planning, and proposes a survey to identify the specific health problems in Nigeria.

190.

Snyder, Leopold J. "Rural Health Education - An Idea Whose Time Has Come." Health Education Monographs 3(1) 6-11,1975.

The monograph provides an outline for the delivery of rural health services. It notes that deficiencies in rural care reflect an insufficiency of health personnel as well as a lack of sophisticated leadership to deal with health problems. Mechanisms are provided that might be employed to create awareness of health education needs and enlist community support for legislative action.

191.

Some Prectical Concepts to Assist Project Evaluation. Washington, D.C.: Practical Concepts Incorporated. 1971.

As an AID-sponsored study, this report provides a logical framework for design and evaluation. Its usefulness to the present study lies in its suggestion of assessment methodologies, and its discussion of evaluation as a "mission-useful process."

192.

Somers, Herman M. "Health and public policy (United States)". Inquiry, 12,87-96. 1975.

This article presents a framework for the study of national health systems. It provides descriptions and analyses of health systems in both developed and underdeveloped countries. It also offers several examples of mini-case studies.

193.

Stahl, Sidney M.; Gardner, Gilbert, "Contradiction in the Health Care Delivery System: Problems of Access". Purdue University, Lafayette, Indiana: Missouri University, Columbia, School of Medicine, Missouri Regional Medical Program, Columbia. Sociological Quarterly, 17, 121-129, 1976.

This article surveys data on issues and problems incurred in gaining access to health delivery systems in Missouri. Results demonstrated that black population received more preventive health care services than the white population. Results were unexpected, since previous studies generally showed that white populations received more services.

194.

Study of Medical Education in the Developing Countries. Evanston, Illinois: Division of International Medical Education Association of American Medical Colleges. 1964.

This planning document discusses factions which shape attitudes of medical school faculties in relation to their being involved in international medical education programs. Inter-institutional relationships and support of The Association of American Medical Colleges are among the factors considered.

195.

Study on Medical Education in the Developing Countries. Evanston, Illinois: Division of International Medical Education, Association of American Medical Colleges. 1965.

A rationale for U.S. support of medical education in the developing nations is presented. Special problems associated with the ability of U.S. medical education to render effective support are discussed.

196.

Systems Analysis and Operations Research: A Tool for Policy and Program Planning for Developing Countries. Washington, D.C.: National Academy of Sciences. 1976.

This contains a useful summary of operations research (SA/OR) theory, methods, and applications with special emphasis on organization, training, and technical assistance. It also provides case studies from five developing nations. While not specifically health manpower oriented, it has utility in that specifically SA/OR skills are used in the health manpower planning process. This document reviews the SA/OR tool and is an important reference for health planners using the tool.

197.

Taylor, C.E. "Doctor's Role in Rural Health Care." International Journal of Health Services, 6(2), 219-230, 1976.

This article is based on health research in India. It discusses developing country health care in terms of need fulfillment and "reasonable gratification" of health workers. Attitudes of village-practicing physicians are examined from the viewpoint of the remuneration received and an unbalanced educational system. The authors advocate that professors should travel to the field to develop a new

health system. It states that clinicians are especially needed to separate what is absolutely essential from the "ritualistic fringe" activities in health care. Family planning and maternal and child care are considered highest on the problem scale and are therefore given greatest priority.

198.

Taylor, C.E. Turkish Health Manpower Study. Baltimore, Maryland: The Johns Hopkins University, School of Hygiene and Public Health, Division of International Health, 1967.

This is another classic in the field. The project on which this book is based was started in July, 1963, with Dr. Taylor as director and Kurt Deuschle as field director. This work sought to define the numbers and categories of health personnel, identify imbalances in geographical, rural-urban, or social distributions of personnel, study utilization patterns, analyze economic factors controlling potential expansion of services, study educational patterns, determine present demand for services, and evaluate manpower requirements in pilot projects. Major methodological approaches included studies tracing professionals and auxiliaries on whom the government had no record since their original registration, defining major problems of medical practice and doctor utilization, defining major problems of nurses, analysis of cost of medical services and doctors' income, and others.

199.

Ten Year Health Plan for the Americas. Final Report of the III Special Meeting of Ministers of Health of the Americas (Santiago, Chile, 2-9 October 1972). Washington, D.C.: 1973.

This plan provides a brief manpower section which highlights personnel problems in the Americas (distribution, skill levels, training, instruction level, etc.) It also provides the Pan American Health Organization policy direction with respect to these issues. It advocates a systematized and coordinated approach to manpower management and utilization.

200.

The Supply of Health Manpower: 1970 profiles and projections to 1990. DHEW pub. no. (HRA) 75-38. Washington, D.C.: U.S. Government Printing Office. 1974.

Useful to this study are Chapters 1 and 2 of this publication, which offer an overview of concepts, definitions, assumptions and methodology in projecting health manpower levels. The detailed occupational profiles in Part II are U.S. levels and are not particularly applicable to developing countries.

201.

The Teaching of Internal Medicine in Latin American Medical Schools. Washington, D.C.: Army Medical Intelligence and Information Agency. 17 Jan 73.

This report pertains to a program of the Pan American Health Organization (PAHO) in which PAHO makes available health textbooks for training purposes to Latin American medical students. Results are included of a poll taken among teachers of various subjects in Latin American medical schools utilizing these textbooks. The content of each subject taught and appropriate methods of teaching it are outlined.

202.

Tuskegee Area Health Education Center, Inc., Alabama. "Community Directed Consortium and its Management System for Health Manpower Education and Health Care Delivery." Birmingham: Alabama Regional Medical Program. 1973.

This report discusses various planning and analysis, education, communication, and production functions of the management system of a community directed consortium. It presents analyses of these factors as they relate to goals, objectives, projects and sub-organizations.

203.

U.S. Department of Health, Education, and Welfare. Assessment of Health Manpower Modelling Efforts and Development of Alternative Modelling Strategies. Rockville, Maryland: Public Health Services, Health Resources Administration, Bureau of Health Manpower. 1976.

This work describes approximately ten health manpower models. It also discusses their respective policy relevance to domestic affairs. It provides a review of extant U.S. data bases and analyzes the feasibility of alternative modeling approaches (micro vs. macro, simultaneous vs. recursive, linear vs. non-linear, categorization by estimation, simulation vs. hypothesis testing, econometric models vs. systems dynamics, etc.)

204.

U.S. Department of Health, Education, and Welfare. Baselines for Setting Health Goals and Standards. Rockville, Maryland: Public Health Service, Health Resources Administration. 1976.

This report attempts to establish through reference to legal mandates the baselines for selected health goals and standards. Chapter IV on the health goals of other countries is particularly pertinent.

205.

U.S. Department of Health, Education and Welfare. Building A Rural Health System. Rockville, Maryland: Public Health Service, Health Services Administration, Bureau of Community Health Services. 1976.

This report discusses the components of a rural health system in terms of levels of care and personnel required at each level. It details necessary linkages to medical schools, health departments, and the community. A schematic of seven models of rural health centers is also presented.

206.

U.S. Department of Health, Education and Welfare. Classification of Medical Education Institutions. Rockville, Maryland: Public Health Service, Health Resources Administration, Bureau of Health Manpower. 1975.

This report, prepared by the Association of American Medical Colleges, describes the development and application of several cluster analysis techniques to data regarding various U.S. medical schools for the purpose of classifying the schools into several categories.

207.

U.S. Department of Health, Education, and Welfare. Descriptive Study of Medical School Applicants 1974-75. Rockville, Maryland: Public Health Service, Health Resources Administration, Bureau of Health Manpower. 1975.

The data included in this report is useful for developing supply projections relating to medical school applicants and the supply of physicians in the United States. The methodology depicted has some application to developing country situations for projective uses.

208.

U.S. Department of Health, Education, and Welfare. Health Planning Information Series, Volumes I-IV: Trands Affecting U.S. Health Care System - Vol.I; Guide to Data for Health Systems Planners - Vol. II; A Data Acquisition and Analysis Handbook for Health Planners - Vol.IV. Rockville, Maryland: DHEW/PHS. 1975-76.

This important series discusses various aspects of health policy relative to the United States.

209.

U. S. Department of Health, Education, and Welfare, Social Security Administration. Personal Health Care Expenditures by State, and Statistics. DHEW pub. no. (SSA) 73011906. Washington, D.C.: U.S. Department of Health, Education, and Welfare. 1973.

This report details a useful methodology for collection and compilation of health manpower expenditure statistics.

210.

U.S. Department of Health, Education, and Welfare. Planning for Nursing Needs and Resources. Bethesda, Maryland: Public Health Service, National Institutes of Health, Bureau of Manpower Education. 1973.

This is an excellent planning document, and is quite detailed in all areas of planning for nursing needs. Chapter 7 assesses requirements for nursing manpower and briefly reviews concepts in assessing requirements, methods for measuring and projecting demand and need, selection of a method, estimation of future nursing supply, and selected references.

211.

U.S. Department of Health, Education, and Welfare. Study of Medical Education: Interrelationships between Component Variables. Rockville, Maryland: Public Health Service, Health Resources Administration, Bureau of Health Manpower. 1975.

This study was prepared by the Association of American Medical Colleges. The analysis was conducted on AAMC data which describes various medical education institutions. The analysis was not designed to test specific hypotheses, but rather to let the data "speak for themselves". Multiple factor analysis was used. Interesting variables were chosen and organized into subsets describing four components: faculty, curriculum, students, and institutions. The variables were analyzed independently and as various aggregates.

212.

U.S. Department of Health, Education, and Welfare. The Priorities of Section 1502. Rockville, Maryland: Public Health Service, Health Resources Administration.1977.

This report provides 11 articles relating to health care priorities. Useful to this study are Davis and Marshall's article "Health Care for Medically Underserved Populations", Hepner's "Multi-institutional systems for health and support", and Holloway, et.al. "Determining 'appropriate' levels of care."

213.

U.S. Department of Health, Education, and Welfare. The Supply of Health Manpower, 1970 Profiles and Projections to 1990. Rockville, Maryland: Public Health Service, Health Resources Administration, Bureau of Health Resources Development. 1974.

This report provides concepts, definitions, assumptions, and methodology for determination of supply. It summarizes various types of information on the health professions and allied health personnel. It also provides detailed occupational profiles of physicians, medical specialists (M.D.'s), dentists, optometrists, pharmacists, podiatrists, veterinarians, registered nurses, and allied health occupations.

214.

U.S. Department of Health, Education, and Welfare. Variables Related to Increases in Medical School Class Size. Rockville, Maryland: Public Health Service, Health Resources Administration, Bureau of Health Manpower. 1975.

This report investigates several variables based upon the clustering of medical schools into seven groups based on the percent of changes in the entering class size from 1970-71 to 1973-74. It is useful to the present study in its analyses of undergraduate medical education programs and reliance on non-full-time faculty.

215.

U.S. Department of Labor, Manpower Administration. Manpower Program Planning Guide. Washington, D.C.: U.S. Department of Labor. 1974.

This guide provides details on various types of manpower planning. It specifically establishes a planning system for the CETA program. It provides useful documantation of the planning process for developing a manpower policy.

216.

Van Ettien, G. "Towards Research on Health Development in Tanzania." Social Science & Medicine, 1972, 6 (3), June, 335-352.

This article suggests new ways of conducting sociological research in the area of medicine in relation to modern institutions providing both health services and training facilities. New strategies are proposed for rural health development, investigation of role of traditional medicine in manpower issues, and training center topics.

217.

Van Ettien, Geert M.; Raikes, Alanagh, M. "Training for Rural Health in Tanzania." Social Science & Medicine, 1975, 9(2), Feb.,89-92.

This report details the Tanzanian government;s change in health policy after President Nyerere's Arush Declaration (1967). This was accomplished in four ways: by emphasis on health center development and dispensaries, expansion of rural staff training, establishment of village health services where part-time helpers provide basic care, and the introduction of mobile health teams.

218.

Van Zile Hyde, Henry, ed. Manpower for the World's Health. Washington, D.C.: The Journal of Medical Education, 41 (9). 1966.

This report contains a collection of 11 chapters and over thirty articles on manpower issues in the developing countries. Articles in Part III concerning medical, economic, and social factors which bear on medical education are of particular interest.

219.

Vaughan, J.P. "Are Doctors Always Necessary? A Review of the Need for the Medical Assistant in Developing Countries." J Trop Med Hyg, 74(12), 265-71. Dec 71.

This review outlines the need to train medical assistants in order to provide the desperately needed manpower skills for developing countries. Case studies from Africa, USSR, Fiji, and Papua, New Guinea are presented.

220.

White, Kerr L. "International Comparisons of Medical Care." World Health Organization, Geneva (Switzerland). Scientific American, 233 (2),17-25,Aug.1975.

This study of health services delivery systems was undertaken to determine whether any universal patterns of health care exist in twelve areas selected from seven different countries. A general comparison of each area is made in terms of perceived need, health resources, and use of the health services system. The article offers evidence which is contrary to the point of view that payment mechanisms and the presence or absence of financial barriers significantly influence the rate at which people use physicians' services. It suggests that epidemiological and statistical survey methods can be applied to areas with comparatively modest health information systems.

221.

World Health Organization. Auxiliary Health Personnel: Report on a Seminar. Brazzaville: WHO. 1972.

This report defines the relationship of the auxiliary health worker to the total health care team. Barriers to the effective use of the auxiliaries are outlined. It stresses that the needs of auxiliaries should be defined in relation to national plans, and that training should be provided only after jobs have been analyzed and training objectives established.

222.

World Health Organization. Health Manpower Planning. Alexandria: WHO. 1971.

This report investigates the method used for determining future trends in health manpower planning which, it states, should be based on quantitative analyses. It includes: data on the work load capacity of physicians and other health personnel; also, disease statistics by demographic characteristics, together with general demographic data.

223.

World Health Organization, Geneva. "Meeting Basic Health Needs in Developing Countries: Alternative Approaches." WHO Chronicle, 29(5) 168-187. 1975.

These case studies are from Bangladesh, Cuba, India, Niger, Nigeria, Tanzania, Venezuela, China, and Yugoslavia. They identify key factors in the political, economic, and administrative framework which either contribute to or detract from the delivery of health services. The Chronicle discusses the incorporation of traditional medicine (acupuncture in China and ayurvedic physicians in India) into modern practice. The innovations presented "are sufficiently promising to warrant a major change in policy and direction permitting practices of the type described... to be fostered, extended, adapted, and used as examples for a large scale global program."

224.

World Health Organization. Methodology of Health Team Manpower Planning: Report of a Symposium. Brazzaville: WHO. 1972.

This report summarizes the discussions on patterns in management of health teams in Africa, duties of team members, definitions of the health team according to regional needs, and the educational objectives of health team training.

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